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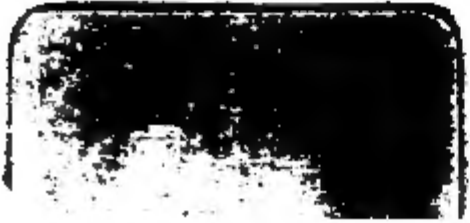
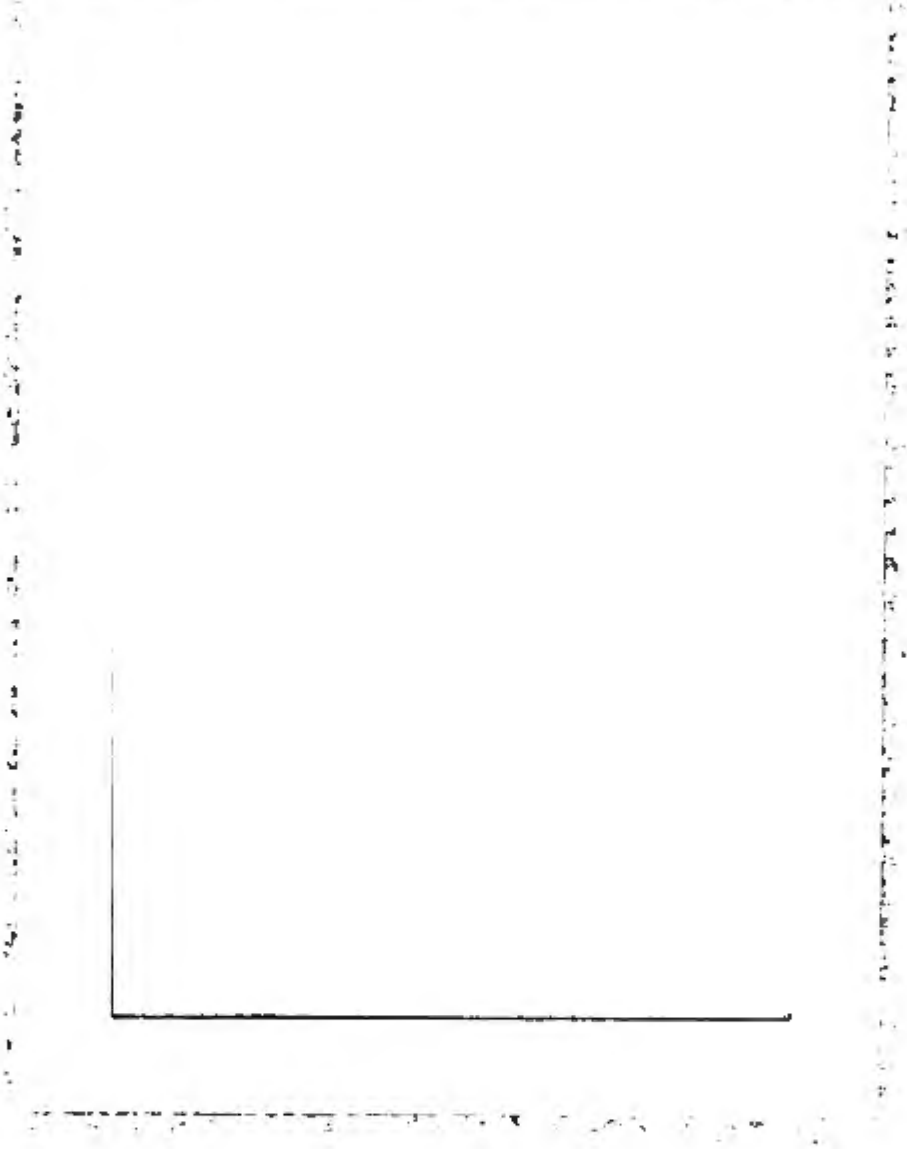
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J. L. C. C. C. C. C.

J. L. C. C. C. C. C.

GODDARD CHAPEL.

CATALOGUE
OF
TUFTS COLLEGE

1900-1901

MALDEN
H. W. WHITEMORE & CO.
121 MADISON STREET
1900

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Next to back cover.

Calendar.

1900.

- SEPT. 20.** College year begins (all departments except the Medical School), Thursday morning.
- SEPT. 22.** Regular College exercises begin.
- SEPT. 23.** Russell Lecture, Sunday, 7.30 P. M.
- NOV. 28.** Thanksgiving recess begins Wednesday, at 1 P. M.
- DEC. 2.** Thanksgiving recess ends, Sunday evening.
- DEC. 19.** Christmas recess begins, Wednesday evening.

1901.

- JAN. 2.** Christmas recess ends, Wednesday evening.
- FEB. 9.** End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
- FEB. 11.** Second half-year begins, Monday.
- FEB. 22.** Washington's Birthday. College exercises suspended.
- MAR. 30.** Spring recess begins, Saturday, 1 P. M.
- APRIL 7.** Spring recess ends Sunday evening.
- APRIL 19.** Patriot's Day. College exercises suspended.
- MAY 17.** Prize Reading in the College of Letters, Friday, 3 P. M.
- MAY 28.** Prize Reading in the Divinity School, Tuesday, 3 P. M.
- MAY 30.** Memorial Day. College exercises suspended.
- JUNE 14.** Class Day, Friday.
- JUNE 16.** Baccalaureate Sermon, Sunday 4.30 P. M.
- JUNE 19.** Forty-fifth Annual Commencement, Wednesday.

First Examination for Admission to the College of Letters.

- JUNE 20.** Algebra, 9 to 10.30 A. M.
English, 10.30 A. M. to 12.30 P. M.
Plane Geometry, 2 to 4 P. M.
Physics, 4 to 5 P. M.
Drawing, 4 to 6 P. M.
- JUNE 21.** Elementary and Advanced Latin, 9 to 12 A. M.
Advanced Mathematics, 9 to 11 A. M.
Natural History, (two subjects) 11 A. M. to 1 P. M.
History, 2 to 4 P. M.
Chemistry, 4 to 5 P. M.
- JUNE 22.** Elementary and Advanced Greek, 9 to 12 A. M.

Intermediate and Advanced German and French, 9 to 11 A. M.

Elementary German and French, 11 A. M. to 12.30 P. M.

JULY 8 to August 17. Session of the Summer School.

Second Examination for Admission to the College of Letters.

- SEPT. 16. Elementary and Advanced Greek, 9 to 12 A. M.
Intermediate and Advanced German and French, 2.30 to 5 P. M.
Elementary German and French, 1 to 2.30 P. M.
- SEPT. 17. Algebra, 9 to 10.30 A. M.
English, 10.30 A. M. to 12.30 P. M.
Plane Geometry, 2 to 4 P. M.
Physics, 4 to 5 P. M.
Drawing, 4 to 6 P. M.
- SEPT. 18. Elementary and Advanced Latin, 9 to 12 A. M.
Advanced Mathematics, 9 to 11 A. M.
Natural History (two subjects), 11 A. M. to 1 P. M.
History, 2 to 4 P. M.
Chemistry, 4 to 5 P. M.

- SEPT. 18. Examination for Admission to the Divinity School in Miner Hall, beginning at 9 A. M.
- SEPT. 19. College year begins, Thursday morning.
Registration of all students at Secretary's office.
Major departments and plans of study for the first half-year must be reported before noon of this day.
- SEPT. 21. Regular college exercises begin.
- SEPT. 22. Russell Lecture, Sunday.
- Nov. 27. Thanksgiving recess begins, Wednesday at 1 P. M.
- DEC. 1. Thanksgiving recess ends, Sunday evening.
- DEC. 18. Christmas recess begins, Wednesday evening.

1902.

- JAN. 1. Christmas recess ends, Wednesday evening.
- FEB. 8. End of first half-year, Saturday.
- FEB. 10. Second half-year begins, Monday.

TUFTS COLLEGE is a railway station four miles from Boston, on the Southern division of the Boston and Maine Railroad. The post-office address is—TUFTS COLLEGE, MASS.

Historical Sketch.

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; and the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the Degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received

his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant, and whose widow continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker came soon after, with gifts and bequests amounting to nearly three hundred thousand dollars.

While the College, as may be seen, owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

“ No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain.”

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—Students were first formally admitted in 1855. The only building at that time was the main College building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first President of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering Courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had a very rapid development, and in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and in 1898 by one in Chemical Engineering. In these courses an effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in the drawing, pattern-making, machine, and forge work, so important to the engineer in any

branch. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, lately completed, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1883 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, a monument of architectural beauty, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall, a new dormitory, made necessary by the growth of the College, was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has, however, been the notable fact of the last few years, of which the external changes have been the indications. Some unclassified students had always been in attendance at the College, and in 1866 the degree of Bachelor of Philosophy was offered to those who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except

that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered for the first time, with an entrance requirement, believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Instead of five members of the corps of instruction, as at the opening of the College in 1855, the catalogue of 1893-94 showed a body of active instructors, exclusive of the Divinity and Medical Schools, numbering twenty-seven, and offering subjects aggregating one hundred and thirteen, divided among twenty-two departments, exclusive of the Engineering Courses proper. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The beneficial results, in the growth of a more earnest and scholarly spirit, have been constantly felt. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. These new courses open broad opportunities to graduates of schools not fitting especially for college, so that they may secure a thorough college training. Bachelors of Science and of Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. Nine women registered in all departments in that year. In the fall of 1894 there was opened for the accommodation of women students Metcalf Hall, the gift of Mr. Albert Metcalf, of Newton. The Allen House provides accommodation for six self-boarding women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with a convenient and handsome building, Miner Hall, containing the library, class rooms, chapel, and reception-room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1895 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary, and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when, in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures, of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said

College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgement and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal; provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain, any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS.

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A.B., S.B., or Ph.B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This Committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committee, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall there-

upon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

**THE ADMINISTRATION OF
THE COLLEGE**

The Trustees.

President.

HENRY B. METCALF.

Vice-President.

HOSEA M. KNOWLTON.

Secretary.

HENRY W. RUGG, Providence, R. I.

Treasurer.

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HENRY D. WILLIAMS.

SUMNER ROBINSON.

HENRY W. RUGG.

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Tufts College.

Lecturer in Geology.

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Assistant in Drawing in the Engineering Department, and Assistant in Mathematics in the Bromfield-Pearson School.

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Two sets of entrance requirements are for the present open to candidates for admission to the College, the

Faculty having decided to continue until further notice the option offered in 1898.

THE NEW REQUIREMENTS.

Every candidate for admission to the College of Letters is required to pass an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

The Primary group includes certain prescribed subjects in different fields, an elementary training in which is regarded as fundamental for college study. In the Secondary Group a range of options, recognizing the equivalence of different preparatory studies when properly pursued, is presented. This permits the candidate to choose the more advanced subjects to be offered as evidence of capacity, in accordance with the course of study pursued in the preparatory school, and with that which he proposes to pursue in College.

The requirements presuppose a secondary school course of four years of systematic study, in which at least eighteen school periods a week are given to instruction in preparation for college. On this basis the *entrance unit* is taken as representing approximately three recitation periods a week for one year, the full requirement being, therefore, twenty-four entrance units. The time spent is not, however, regarded as an exact measure of the quantity or range of work, and the entrance unit is held as an average measure.

No person will be admitted to regular standing as a candidate for a degree who has conditions amounting to more than *three entrance units* in the Primary Group, or to more than *six* in both groups, and of these not more than one unit may be in any one primary subject, or in the advanced foreign language offered; but candidates who have passed the requirements of the Primary Group with conditions not exceeding *three entrance units*, and have otherwise complied with the requirements governing the admission of special students, may be admitted as special

students, and allowed to take such work in the College as they may be qualified to carry on. These students may, when the College offers subjects covering the ground of their deficiencies, make up such deficiencies by taking the corresponding subject in the College, and so ultimately attain regular standing; but work so taken to fulfil entrance requirements will in no case be counted as a part of the College requirements for a degree.

The values in entrance units affixed to each subject in the following lists of the two groups will enable the candidate to make up a schedule counting the required number of units.

Candidates may, at the discretion of the Committee on Admissions, receive credit of one or more entrance units for additional time spent on accepted subjects. Partial credit in any subject may be given at the discretion of the examiner, but all such credit will be conditioned upon the ultimate completion of the requirement by college work in the same subject, and deficiencies in any subject cannot be offset by credit for preparation based upon less than the minimum amount of work called for in another subject.

Primary Group.*

All candidates for admission to the College are required to pass satisfactory examinations in the following subjects, counting an aggregate of twelve entrance units:—

I. Elementary English.

Three entrance units.

NOTE.—No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for

*A tabulated summary of all the requirements will be found on page 44.

only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be :—

1901.—George Eliot's *Silas Marner*; Pope's *Iliad*, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*; Shakespeare's *Merchant of Venice*; Cooper's *Last of the Mohicans*; Tennyson's *Princess*; Coleridge's *Rime of the Ancient Mariner*.

1902.—George Eliot's *Silas Marner*; Pope's *Iliad*, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*; Shakespeare's *Merchant of Venice*; Cooper's *Last of the Mohicans*; Tennyson's *Princess*; Coleridge's *Rime of the Ancient Mariner*.

1903, 1904, 1905.—Shakespeare's *Merchant of Venice* and *Julius Cæsar*; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Rime of the Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice*.—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be :—

1901.—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

1902.—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

1903, 1904, 1905.—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

II. One of the following Languages :

Three entrance units.

I. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency

of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately) :—

(*a*) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred and fifty duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riehl, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der Deutschen Vergangenheit*, especially, *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch, *Das Jahr 1813*; Schiller, *Der Dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced German (see Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately) :—

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The elementary examination will be suited to the attainment of those who have studied Latin systematically for at least four peri-

ods a week for two years. It will consist of two parts, which cannot be taken separately:—

(a) The translation at sight into idiomatic English of simple Latin prose, with questions on the ordinary forms and constructions of the language. Candidates will be expected to have read Cæsar, *De Bello Gallico*, I-III, and in addition about twenty pages of Teubner text (*e.g.*, Cæsar, *De Bello Gallico*, IV, or seven hundred and fifty lines of Ovid, or an equivalent).

(b) The translation into Latin of easy sentences, involving only familiar words and idioms.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least four periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(a) The translation at sight of passages of simple Attic prose.

(b) A thorough examination on Books I and II of Xenophon's *Anabasis*, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple Attic prose, involving the use of such words, constructions, and idioms only as occur in the prescribed portion of Xenophon.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's *Anabasis*, or an equivalent.

III. Elementary History.

Three entrance units.

Two of the following:—

1. The History of Greece to the death of Alexander, with due reference to Greek life, literature, and art.
2. The History of Rome to the accession of Commodus, with due reference to Roman literature and government.
3. The History of England, with due reference to English social and political development.
4. American History, with the elements of Civil Government.

For preparation in each of these subjects the equivalent of one year's work, of not less than three periods a week, is necessary. The examination in each case will require comparison and judgment on the part of the candidate, and not merely the use of memory. The use of at least one good text-book of not less than three hundred pages, collateral reading aggregating not less than five hundred pages, and

practice in written work, will be presumed. In addition to the examination, the presentation of written work done in the secondary school and certified by the teacher will be an important part of the evidence of proficiency required by the College. This written work should be presented, when the candidate appears for examination, in the form of a notebook or bound collection of notes, of not less than fifty written pages in each subject offered. Such written work must include practice in some of the following:—

(a) Notes and digests of the pupil's reading outside the text-books.

(b) Written recitations, requiring the use of judgment and the application of elementary principles.

(c) Written parallels between historical characters or periods.

(d) Brief studies of topics limited in scope, prepared outside the class-room, and including the use of contemporary material.

(e) Historical maps or charts, showing movements of exploration, migration, or conquest, territorial changes, or social phenomena.

IV. Elementary Mathematics.

Three entrance units.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(a) Algebra, through quadratic equations, including radical quantities, together with proportion, arithmetical and geometrical progression, and the binomial theorem for positive integral exponents; and

(b) Plane Geometry, including the solution of simple original exercises and numerical problems.

Secondary Group.

Bachelors of Arts.*—Every candidate for admission to regular standing in the courses leading to the degree of Bachelor of Arts is required to pass in a satisfactory manner examinations in subjects chosen from this group, aggregating twelve entrance units, including an advanced requirement in at least one foreign language other than the elementary language offered in the Primary Group.

*The announcement of requirements in the Secondary Group for candidates for the degree of Bachelor of Science is deferred.

Special Students.—Candidates for admission as Special Students must comply with the regular requirements of the Primary Group, and must also take such examinations as may be required by the instructor of the major department to which they seek admission. These requirements may be waived, by special vote of the Faculty, in the case of students seeking instruction in a limited range of subjects bearing directly upon the work of a chosen profession.

The subjects and their values in entrance units are as follows:—

I. Advanced English. *One entrance unit.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

II. Elementary German (Primary Group, II, 1), when not offered in the Primary Group. *Three entrance units.*

III. Elementary French (Primary Group, II, 2), when not offered in the Primary Group. *Three entrance units.*

IV. Elementary Latin (Primary Group, II, 3), when not offered in the Primary Group. *Three entrance units.*

V. Elementary Greek (Primary Group, II, 4), when not offered in the Primary Group. *Three entrance units.*

VI. Advanced German. *Four* entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred and fifty duodecimo pages of simple German, chiefly narrative prose, at least six hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (a). At least one-half of the amount read should be nineteenth-century prose.

*An advanced foreign language includes the corresponding elementary, and the credit therefor.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French.

Four entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(b) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin.

Six entrance units.*

The advanced examination will be suited to the attainment of those who have studied Latin systematically for at least five periods a week for four years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of passages selected from Cæsar, Vergil, Ovid, and Cicero, with a thorough examination on a prescribed

*An advanced foreign language includes the corresponding elementary, and the credit therefor.

portion of Cicero's speeches (Orations against Catiline, II, III, IV), to test the candidate's mastery of the ordinary forms, constructions, and idioms. Candidates will be expected to have read Cæsar, *De Bello Gallico*, I-III; Cicero, the speeches against Catiline and on the Manilian Law; Vergil, *Æneid*, I-V; and in addition not less than twenty pages, Teubner text, of Cæsar (e. g., Book IV), twenty to twenty-five pages, Teubner text, of Cicero (e. g., the orations for Archias and Marcellus), nine hundred lines of Vergil, and fifteen hundred lines of Ovid, to be selected at the discretion of the preparatory teacher. While these readings are preferred, suitable equivalents will be accepted.

The examination in sight reading will be based on the assumption that candidates have read the portions above specified.

(b) The translation into Latin prose of a passage of connected narrative, based on one of the prose authors ordinarily read. Moulton's *Preparatory Latin Composition* or Dodge and Tuttle's *Latin Prose Composition* will indicate the amount of work required.

A more extended knowledge of grammar will be expected than in the case of elementary Latin.

Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first. The Roman pronunciation is recommended.

IX. Advanced Greek.

Five entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(a) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(b) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's *Anabasis*, or their equivalent in Attic prose, and six books in Homer's *Iliad*, or their equivalent in the *Odyssey*. It is recommended that Greek composition accompany all

* An advanced foreign language includes the corresponding elementary, and the credit therefor.

stages of the preparation, and that the pupil be practised in reading Greek aloud from the beginning of his course.

X. Advanced History.

Two entrance units.

One of the following :—

1. The History of Greece and Rome, for those only who have offered English and American history as primary subjects.
2. The History of England and America, for those only who have offered Greek and Roman history as primary subjects.
3. The History of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.
4. Any one of the primary subjects not offered as such, combined with a year's detailed study of a limited period within that field.

Each of these subjects requires two years' study of not less than three recitation-periods a week, or its equivalent, but 1 and 2 may be divided, and a credit of *one entrance unit* will be given for evidence of proficiency representing one year's work in *one* of the two divisions included under each head.

The remarks in connection with the History requirements of the Primary Group apply to these, but a more thorough knowledge and greater power in combining facts and working out results will be expected. The same classes of tests in examination and written work will be applied, except in the case of the "detailed study of a limited period," on which an individual examination will be given. Especial attention will be paid to the use of English in all work submitted.

XI. Advanced Mathematics.

One entrance unit.

Two of the following :—

1. Plane Trigonometry, with its applications.
2. Solid Geometry.
3. Elementary Analytic Geometry.
4. Advanced Algebra.

XII. Physics.

(a) **ELEMENTARY.** *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(b) **ADVANCED.** *Two entrance units.* In addition to (a), the candidate is required to present satisfactory evidence, by both certificate and record book, of having completed a year's course of laboratory experiments in Physics of such grade as Hall and Burgin's Text-Book of Physics.

XIII. Chemistry.

(a) **ELEMENTARY.** *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry

(the non-metals) of not less than three periods a week for a year, in amount equal to that in *An Introduction to the Study of Chemistry*, by Ira Remsen, with experimental work in the non-metals equal in amount to that in *Experiments in General Inorganic Chemistry*, by Frank W. Durkee. The experiments are to be performed by the students. A laboratory note-book, certified by the instructor and containing an exact record of the experimental work, must be presented by the candidate at the time of examination, or must accompany the certificate. After admission to the College, students who have passed in Elementary Chemistry may take Chemistry 1, omitting the laboratory work of the first term; and, if the examination is satisfactory, they may omit the entire work of the first term in Chemistry 1.

(b) **ADVANCED.** *Two entrance units.* Descriptive theoretical inorganic chemistry, as in the elementary requirement, and in addition a course of one year, of at least three periods a week, devoted to the study of the metals, in amount equal to that in Remsen's text-book, mentioned above, and experiments with the metals and their compounds, covering the ground of and equal in number to those in Durkee's experimental manual. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

XIV. Natural History.

One entrance unit.

In Natural History the examiners give more weight to the character of work than to time spent; but at least three periods a week for the year must have been given to the subject presented. In order that an adequate opinion may be formed, certificates should give full information as to text-books, character of work done, and relative amount of time devoted to laboratory and to recitation. Laboratory work will count for more than recitation, and certified laboratory note-books should be submitted. In botany and zoology the work should be on structural lines, and little credit will be allowed for time spent in the analysis of plants, or in the identification of birds, insects, etc. The following are the subjects which may be presented for admission, the names of authors of text-books in connection with each being an index of the character of the work expected:—

1. General Biology: Huxley and Martin, Dodge.
2. Botany: Bergen, Bessey, Campbell, Spaulding, Setchell.
3. Zoology: Boyer, Colton, Needham.
4. Physiology: Huxley, Martin, Jenkins (Advanced Course).
5. Geology: Dana, Leconte, Scott, Tarr.

TABULAR VIEW OF REQUIREMENTS FOR ADMISSION.

Candidates for Degree of A.B.

[Boldface figures indicate the credit in entrance units. The italicized parentheses (*Prim.*) and (*Sec.*) refer to the fuller statements of each requirement under the headings "Primary" and "Secondary Group" on pages 34 to 43.]

Group.	English.	Foreign Languages.	History.	Mathematics.
PRIMARY, 12 Units. All subjects required. Conditions amounting to three units allowed, but only one unit in one subject.	Elementary (<i>Prim.</i> 1) 3.	Elementary (<i>Prim.</i> 2) 3. [One of the following: German, French, Latin, or Greek.]	Elementary (<i>Prim.</i> 3) 3. [Two of the following: Greek, Roman, English, American.]	Elementary (<i>Prim.</i> 4)
SECONDARY, 12 Units. All subjects optional, except that one advanced foreign language other than the Primary Group language must be included. But one of the 12 possible units of condition may be in the advanced foreign language	Advanced (<i>Sec.</i> 1.) 1. Does not include Elementary English.	Elementary German (<i>Sec.</i> 2) 3. Elementary French (<i>Sec.</i> 3) 3. Elementary Latin (<i>Sec.</i> 4) 3. Elementary Greek (<i>Sec.</i> 5) 3. Advanced German (<i>Sec.</i> 6) 4* Advanced French (<i>Sec.</i> 7) 4* Advanced Latin (<i>Sec.</i> 8) 6* Advanced Greek (<i>Sec.</i> 9) 8*.	Advanced (<i>Sec.</i> 10) 2. [Either I, II, III, or IV.] [One-half of I or II, 1.] Does not include Elementary History.	Advanced (<i>Sec.</i> 11.) 1. [Two of I, II, III, and IV.] Does not include Elementary Mathematics.
				Physics (<i>Sec.</i> 12) (a) 1. (b) 2. b includes a. Chemistry (<i>Sec.</i> 13) (a) 1, (b) 2. b includes a. Natural History (<i>Sec.</i> 14) 1.

* An advanced foreign language includes the corresponding elementary, and the credit therefor.

THE OLD REQUIREMENTS.

Subjects for Examination.

The subjects in which candidates for admission to the Freshman Class may be examined are given below. The requirements for candidates for the several courses will be found in the schedule of examination groups on pages 50 to 52.

LATIN.

1. **LATIN GRAMMAR.**—Allen and Greenough's or Harkness's Grammar, including Prosody.
2. **CÆSAR.**—Gallic War, Books I-IV.
3. **CICERO.**—Orations against Catiline, for Archias, Marcellus, and the Manilian Law.
4. **VERGIL.**—Æneid, Books I-VI.
5. **OVID.**—Metamorphoses, 2,500 lines.
6. **LATIN COMPOSITION.**—Collar's Latin Composition, and translation into Latin of a connected passage of English prose, not taken from the text-book, but involving only familiar words and idioms.

Alternatives.—While the foregoing requirements are preferred, equivalents will be accepted; also in place of the last two orations of Cicero and requirement 5, an examination may be taken, if desired, on average passages from the above-named works, not included in the portions prescribed.

GREEK.

7. **GREEK GRAMMAR.**—Hadley-Allen's or Goodwin's Greek Grammar, including Prosody.
8. **XENOPHON.**—Anabasis, four books, or its equivalent in Attic prose.
9. **HOMER.**—Iliad, six books.
10. **GREEK COMPOSITION.**—The translation into Greek of a connected passage of English prose. Woodruff's Greek Composition is recommended as a drill-book.

Alternatives.—In place of requirements 8 and 9, translation at sight of easy passages of Attic prose and average passages from Homer.

GERMAN.

II. ELEMENTARY GERMAN.

The Elementary Examination will be adapted to the proficiency

of those who have studied German in a systematic course of five periods a week for *one* year. It will consist of two parts (which, however, cannot be taken separately):—

(a) The translation at sight of a passage of easy prose, containing no rare words.

The passages set for translation will be suited to candidates who have read not less than one hundred and fifty duodecimo pages of simple German, chiefly narrative prose; this amount includes sight reading done in class. It is important that all translation be done into clear and idiomatic English.

(b) The translation into German of simple English sentences, to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugation of the weak and the more usual strong verbs, the declension of articles, adjectives, pronouns, and such nouns as are readily classified; the commoner prepositions; the simpler uses of modal auxiliaries; the elements of syntax and word-order. Proficiency may also be tested by direct questioning.

Practice in pronunciation by reading aloud as much as possible from the texts used in the class is recommended; also the writing of German from dictation.

12. INTERMEDIATE GERMAN.—The Intermediate Examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of ordinary German.

The remarks under 13 (a) apply, merely substituting "*two hundred*" for "*six hundred*" in that program.

(b) The translation into German of a passage of simple English prose.

A less extensive knowledge of syntax than for 13 (b) will be presupposed in the selection of the matter for translation.

13. ADVANCED GERMAN.—The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to the amount specified under "Elementary (a)," at least six hundred duodecimo pages of classical and contemporary prose and verse, to be selected from such works as the following: Riehl, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch,

Das Jahr 1813; Schiller, *Der dreissigjährige Krieg, Wilhelm Tell, Maria Stuart, Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea, Egmont, Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German, and to answer in that language questions asked by the instructor.

FRENCH.

14. ELEMENTARY FRENCH.

The Elementary Examination will be adapted to the proficiency of those who have studied French in a systematic course of five periods a week for *one* year. It will consist of two parts (which, however, cannot be taken separately):—

(a) The translation at sight of easy prose.

The passage set for translation will be suited to candidates who have read not less than two hundred duodecimo pages from the works of at least three different authors; this amount includes sight reading done in class. Not more than half the reading should be from works of fiction. It is important that all translation be done into clear and idiomatic English.

(b) The translation into French of English sentences, or a short connected passage, to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugation of regular and the more usual irregular verbs, such as *aller, tenir, pouvoir, savoir, voir, vouloir, dire, faire*, and those belonging to the classes represented by *dormir, ouvrir, connaître, conduire, craindre*; the forms and positions of the personal pronouns; the uses of other pronouns, and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number, except rare cases; the commoner uses of the article; and the partitive constructions. Proficiency may also be tested by direct questioning.

Pronunciation should be carefully taught, and the pupil should be accustomed to hear and understand the spoken language. The writing of French from dictation is also recommended.

15. INTERMEDIATE FRENCH.

The Intermediate Examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of ordinary French.

The remarks under 16 (a) apply, merely substituting "*three hundred*" for "*eight hundred*."

(b) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for 16 (b) will be presupposed in the selection of matter for translation.

16. ADVANCED FRENCH.

The Advanced Examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read, in addition to the amount specified under "Elementary (a)," not less than eight hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(b) The translation into French of a passage of English prose.

In preparing for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

MATHEMATICS.

17. ALGEBRA, through quadratic equations, including radical quantities, together with proportion, arithmetical and geometrical progression, and the binomial theorem for positive integral exponents.

18. PLANE GEOMETRY.

19. SOLID GEOMETRY.

HISTORY.

20. (a) ANCIENT HISTORY (Greece and Rome), or

(b) MEDIAEVAL AND MODERN EUROPEAN HISTORY, or

(c) THE HISTORY OF ENGLAND AND THE UNITED STATES.

The following text-books are recommended, and will indicate the amount of preparation required: (*a*) and (*b*), Sheldon's Outlines of General History; for Ancient History, Oman's or Smith's (smaller) Greece, Allen's Roman People; for Mediæval and Modern Europe, Myers's General History; for the History of England and the United States, Montgomery's Leading Facts in English History, Fiske's History of the United States for Schools, Johnston's History of the United States for Schools, Montgomery's Students' American History, or Channing's Students' History of the United States. The use of such manuals as Bachelier's American History (Library Method) and Getchell's Study of Mediæval History by the Library Method is helpful.

ENGLISH.

21. ENGLISH.

Note.—No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject-matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

1901.—George Eliot's *Silas Marner*; Pope's *Iliad*, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*; Shakespeare's *Merchant of Venice*; Cooper's *Last of the Mohicans*; Tennyson's *Princess*; Coleridge's *Rime of the Ancient Mariner*.

For lists for 1902-1905, see the New Requirements, Elementary English.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure;

and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be :—

1901.—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

For lists for 1902-1905, see the *New Requirements, Elementary English*.

SCIENCES.

22. **PHYSICS.**—The requirement in Physics is an acquaintance with the subject as treated in Avery's or Gage's work, or other of similar grade, with special attention to Mechanics and ability to work out numerically problems in that department.

23. **CHEMISTRY.**—Remsen's *Briefer Course*, or its equivalent.

24. **NATURAL HISTORY.**—Any two of the four subjects: Botany, Zoology, Physiology, or Geology. The amount required in each is essentially covered by any good text-book for secondary schools. In Botany and Zoology, laboratory work is of more importance than the study of a text-book. As illustrating the character of preparation required, the following books may be mentioned: in Botany, Bessey's *Briefer Course*, Campbell's *Structural and Systematic Botany*, or Spaulding's *Introduction to Botany*; in Zoology, Colton's *Practical Zoology*; in Physiology, Huxley's *Elementary Physiology*, Jenkins's *Advanced Lessons in Human Physiology*, or Martin's *Human Body*, briefer course; in Geology, Dana's *Geological Story Briefly Told*, or Leconte's *Elements of Geology*.

25. **FREEHAND DRAWING.**—Outline drawing from simple casts, geometric models, and groups of models.

Examination Groups.

FOR COURSES LEADING TO DEGREE OF A.B.

Candidates under the old requirements for courses leading to the degree of Bachelor of Arts must take their examination in the subjects comprised in one of the two following groups :—

Group I.

LATIN, 1, 2, 3, 4, 5, and 6.

GREEK, 7, 8, 9, and 10.

GERMAN, 11 or FRENCH, 14.

MATHEMATICS, 17 and 18.

HISTORY, 20.

ENGLISH, 21.

Group II.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.

GERMAN, 11 and 13. } or { FRENCH, 14 and 16.
FRENCH, 14. } GERMAN, 11.

This group differs from Group I in the substitution for Greek of advanced work in Modern Languages.

FOR COURSES LEADING TO DEGREE OF Ph.B.

Candidates for courses leading to the degree of Bachelor of Philosophy must take their examination in the subjects comprised in one of the two following groups:—

Group III.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.

GERMAN, 11 and 12. } or { FRENCH, 14 and 15.
FRENCH, 14. } GERMAN, 11.

Group IV.

MATHEMATICS, HISTORY, and ENGLISH, as in I.

GERMAN, 11 and 13. } or { FRENCH, 14 and 16. } or { GERMAN, 11
FRENCH 14. } GERMAN, 11. } FRENCH, 14
and 15.

PHYSICS, 22.

CHEMISTRY, 23.

NATURAL HISTORY, 24.

To be accepted, these subjects must represent an aggregate of at least three years of study, with an average of four periods a week.

[LATIN, 1, 2, 3, and, in 4, three books of the *Æneid*, or their equivalent, will be accepted in place of one intermediate Modern Language; that is, GERMAN, 11 and 12, or FRENCH, 14 and 15.]

Groups III and IV are offered to meet the needs of graduates of the English courses, so-called, in the best high schools, who may desire to enter upon college study looking toward a degree. It will be seen, by reference to the appropriate numbers in the preceding subject list, that Group III accepts a smaller amount of preparation in the modern languages than that required for entrance through Group II to courses leading to the degree of Bachelor of Arts. Group IV allows the substitution for Latin of an increase over the requirement of Group III in modern languages, and of elementary work in three scientific subjects.

FOR COURSES LEADING TO DEGREE OF S.B.**Group V.**

MATHEMATICS, HISTORY, and ENGLISH, as in I.

LATIN, 1, 2, and in 4, four books of the Æneid ; or

GERMAN, 11 and 12 ; or

FRENCH, 14 and 15.

SCIENCE : One year's work, with a weekly average of at least three periods of class work, in one of the following : Chemistry, Physics, Physiology, Botany, Zoology, Geology, Drawing.

This examination group admits to the courses leading to the degree of Bachelor of Science : the General Course in Science, the Special Courses in Biology and Chemistry, and the Medical Preparatory Course. These courses are intended primarily for graduates of English high schools who have a special object before them lying along the lines laid out for these courses.

FOR ENGINEERING COURSES.

Candidates for the courses leading to the degree of Bachelor of Science in Engineering will be required to take the subjects comprised in

Group VI.

MATHEMATICS, 17, 18, and 19.

GERMAN, 11, or FRENCH, 14.

ENGLISH, 21.

DRAWING, 25.

GENERAL INFORMATION RELATING TO ADMISSION.

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Tuesday, Wednesday, and Thursday preceding the beginning of the College year. The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the Calendar, pages 4 and 5.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately

prepared, and will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained, both in the preparatory studies and in the studies in which the candidate desires credit for advanced work.

Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools that have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must state the time devoted to each subject offered for admission, the standing of the student according to the school record, and such facts in regard to the method and means of instruction as the department examiners may call for.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year, and any certificate from a school not on the approved list of the College should be accompanied by the necessary information in regard to courses and facilities of instruction, written upon the official blank of the College, in order to be considered by the Committee on Admission.

Blank forms for certificates, and for application from secondary schools, will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

Requirements for Degrees.

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or for that of Bachelor of Philosophy, or for that of Bachelor of Science, according to the examination group upon which they are admitted to the College. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study. Candidates for the degree of Bachelor of Philosophy will be necessarily somewhat more limited in their selection of subjects because of the nature of their preparation, while the courses leading to the degree of Bachelor of Science consist mainly of prescribed work on special lines. Those who have fulfilled the requirements for the degree of Bachelor of Philosophy may obtain the degree of Bachelor of Arts on the satisfactory completion of six term hours of additional work in approved elective subjects.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation for university and professional study. Throughout the courses students have large liberty in choosing their work, but they are brought into personal advisory relations with the major instructors, who arrange and guide a considerable portion of their work after its general direction has been determined. A reasonable amount of guided specialization is thus provided for, while the personal relations of the student with the major instructor form a valuable adjunct to the routine work of instruction in developing the interest and the character of the student. All work actually accomplished by the student in regular standing counts

toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS.

For A.B. and Ph.B.

[NOTE.—Each department offers a series of subjects for study. The unit for indicating the requirements is the *term hour*, which represents the number of program hours per week required in each subject, expressed for a period of one term. Thus a subject calling for three hours a week, for one term, represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.]

(1) The requirement for the degree of Bachelor of Arts or Bachelor of Philosophy is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

(2) The program of prescribed studies is as follows:—

	TERM HOURS.
LANGUAGES (Latin, Greek, French, German; each student to take <i>three</i>)	18
ENGLISH (Rhetoric, Composition, Themes, Literature)	10
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology; each student to take <i>one</i>)	6
MENTAL AND MORAL SCIENCE (Philosophy, History, Political Science; each student to take <i>one full or two half</i> subjects)	6
PHYSICAL TRAINING	2
	<hr/>
A total of	48

The requirements are by groups, not by special subjects, and in each group except Mathematics some choice is allowed the student.

The program of the student in the first year will be made up from the prescribed groups, except by special permission of the Faculty.

(3) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work. The major de-

partment and the plan of work for the first half-year must be reported by the student, in the proper form, upon registration on the opening day of the College year.

(4) Acting under the advice of the instructor in his major department, the student will make up a program of eighteen term hours in collateral subjects; that is, subjects tending to strengthen and assist his work in his major. The student's major instructor is to be his official adviser on general matters relating to his college course.

(5) The remaining forty-four term hours of the required aggregate are to be made up by the free election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects.

(6) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

Summary.

	TERM HOURS.
Prescribed work	48
Major department	18
Collateral subjects	18
Free elective	44
	<hr/>
	128

For S.B.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the programs for the General Science Course, the Special Courses in Biology and Chemistry, and the Medical Preparatory Course, elsewhere described. The highly specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

Departments of Instruction.

MAJOR DEPARTMENTS.

Any of the following may be chosen as major departments:

ENGLISH,	POLITICAL SCIENCE,
GERMAN,	MATHEMATICS,
FRENCH,	PHYSICS,
LATIN,	CHEMISTRY,
GREEK,	BIOLOGY,
PHILOSOPHY,	ENGINEERING.
HISTORY,	

In the subjoined statements of the work done in the different departments, the name of the major instructor is that given at the head of each department that offers a major course. In other cases the name is given of the instructor in general charge of the department. When two names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Bracketed subjects will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. All subjects continue through the year unless otherwise indicated.

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours assigned to the subjects in the courses in Liberal Arts follows the subjoined statements of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH.

PROFESSOR SHIPMAN AND ASSISTANT PROFESSOR WHITTEMORE.

The work of the department includes the theory and practice of composition and the study of literature.

English is required to the end of the second year, or ten term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition. The remainder of the required work offers in each half-year opportunity for choice among several options. Individual conference in both years permits instruction to be adapted to personal needs. Composition as elective is more closely connected with the study of literature, and in such forms as essay, story, oration, poem, play, is indicated in the following scheme of subjects.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. In the more advanced classes the seminary method is employed. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In all literary subjects, composition is required as an essential part of the work.

SUBJECTS.

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (first half-year).* PROFESSOR SHIPMAN AND ASSISTANTS.

*2. A Study of Expression. Lectures, readings, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (second half-year).* ASSISTANT PROFESSOR WHITTEMORE AND MR. THOMPSON.

3. Daily Composition. *Monday at 9.45 (first half-year, counting as two hours).* ASSISTANT PROFESSOR WHITTEMORE.

English 3 is open to students who have obtained at least Grade B in English 2.

*4. Exposition, narration, and description. Specimens from eminent authors are studied. The written work consists of two themes each week. *Monday at 8.45 (first half-year, counting as two hours).* MR. THOMPSON.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week. *Two hours a week (first half-year).* PROFESSOR SHIPMAN.

*6. Essays, with special attention to the construction of extended discourse. Weekly papers, plans, free discussion, individual criticism. *Two hours a week (first half-year), or two hours a week (second half-year).* PROFESSOR SHIPMAN.

[7. English Versification. Study of poetic forms and practice in poetic composition. *Wednesday at 11.45.* PROFESSOR MAULSBY.]

*8. Daily Composition. *Two hours for the second half-year.* PROFESSOR SHIPMAN.

[Subjects 1 and 2, with two hours for the first half-year selected from 3, 4, 5, and 6, and two hours for the second half-year selected from 6, 8, and 11, constitute the prescribed work in English.]

[9. English Lyrics of the Sixteenth and Seventeenth Centuries. *Monday at 2.* ASSISTANT PROFESSOR WHITTEMORE.]

10. The English Bible. *Tuesday and Thursday at 11.45 (first half-year).* ASSISTANT PROFESSOR WHITTEMORE.

*11. General View of English Literature. Lectures, examinations, and required reading. *Monday and Friday at 10.45 (second half-year).*

MR. EARLE, PROFESSOR WADE, PROFESSOR KNIGHT,
MR. THOMPSON, ASSISTANT PROFESSOR WHITTE-
MORE, AND PROFESSOR SHIPMAN.

[**12. American Literature. Lectures, required reading, special topics, essays. *Monday, Wednesday, and Friday at 3.*

PROFESSOR MAULSBY.]

13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

MR. THOMPSON.

[14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Monday, Wednesday, and Friday at 2 (second half-year).*

PROFESSOR MAULSBY.]

[15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Thursday at 2.*

ASSISTANT PROFESSOR WHITTEMORE.]

[16. Browning. Poems, collateral reading, lectures, brief critical essays. *Wednesday at 9.45.*

PROFESSOR MAULSBY.]

17. Shakespeare. Reading of selected plays, lectures, examinations, essays. *Monday, Wednesday, and Friday at 8.45 (first half-year).*

MR. EARLE.

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Monday, Wednesday, and Friday at 8.45 (second half-year).*

ASSISTANT PROFESSOR WHITTEMORE.

English 17 should precede English 18.

[19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems, examinations. *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR MAULSBY.]

English 19 may be dropped at the end of the first half-year.]

*20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. The subject may be continued through the second half-year, when the whole of Beowulf may be read. *Monday, Wednesday, and Friday at 10.45.*

MR. EARLE.

[21. Advanced Anglo-Saxon. Chronological development of Anglo-Saxon prose and poetry. *Monday, Wednesday, and Friday at 11.45.*

MR. EARLE.]

[*22. Historical English Grammar. Brief history of the English language. The development of English sounds and their written characters. The growth of the several parts of speech and of their inflections. *Wednesday at 8.45.* MR. EARLE.]

23. The Short Story. Examples, and composition. *Two hours a week (first half-year), or two hours a week (second half-year).*

ASSISTANT PROFESSOR WHITTEMORE.

24. History of English Criticism. Discussion, examinations, essays. *Three hours for the second half-year.* PROFESSOR SHIPMAN.

[25. Development of a Literary Form, as (a) the drama, (b) the novel, (c) the lyric. PROFESSOR MAULSBY.]

27. Plays (1875-1900). Examples, and composition. *Two hours for the first half-year.* ASSISTANT PROFESSOR WHITTEMORE.

ORATORY.

ASSISTANT PROFESSOR WHITTEMORE.

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practised in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory I aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for specializing, during two successive years, in either dramatic reading or in senatorial oratory. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

SUBJECTS.

1. The Principles of Oratory Exemplified in Practice. Class exercises in vocalization and gesture. *Thursday at 8.45.*

2. Study of Selections from Riddle's Modern Reader. Individual presentation of standard poetry and prose. *Thursday at 10.45.*

[3. Study of Selections from American Orators. Individual presentation of forensics. *Thursday at 2.*]

4. Dramatic Rendering. Study and delivery of scenes from the standard drama. The possible public presentation of a play. *One hour a week for the year.*

[5. Formal Oral Debate. The practice of debate, under the usual parliamentary forms of a deliberative body. The possible presentation of a public debate. *One hour, to be arranged.*]

GERMAN.

PROFESSOR FAY.

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture ; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill ; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal ; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in instruction and in the practice of the language. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the

scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS.

*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Seeligmann, *Altes und Neues*; Zschokke, *Der zerbrochene Krug*; Buchheim's *Balladen und Romanzen*. *Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR FAY AND MR. DEMETER.

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate German. Reading, Grammar, and Composition. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Riehl, *Der Fluch der Schönheit*; Seume, *Mein Leben*; Freytag, *Aus dem Staat Friedrichs des Grossen*; Scheffel, *Der Trompeter von Säckingen*. *Tuesday, Thursday, and Saturday at 8.45.*

MR. DEMETER.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: course for the rapid reading of modern prose. Contemporary authors. Second half-year: course introductory to the classic authors: Lessing, *Minna von Barnhelm*; Schiller, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*. *Monday, Wednesday, and Friday at 9.45.*

PROFESSOR FAY AND MR. DEMETER.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3 B. German Composition. First half-year: Stein's Exercises, original themes, dictation, conversation. Second half-year: Buchheim's Exercises, with more advanced work in original themes, oral and written translation into German, and conversation. This course is offered to students who have satisfactorily completed German 2, or its equivalent. *Two hours, to be arranged.*

MR. DEMETER.

4. Schiller and Goethe. Maria Stuart; Wallenstein; Egmont; Robertson's Correspondence between Goethe and Schiller; lyrics; collateral reading in historical prose. *Tuesday, Thursday, and Saturday at 11.45.* PROFESSOR FAY.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced course in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laocoön; Tasso, Iphigenie, Faust, Parts I and II; with collateral reading. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR FAY AND MR. DEMETER.

6. History of German Literature: Vilmar, Kluge, with illustrative works for leading epochs. Course in Middle High German: Das Nibelungenlied; Walther von der Vogelweide. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR FAY.

FRENCH.

PROFESSOR FAY AND PROFESSOR LEWIS.

The plan and scope of the department are, in general, the same as those of the Department of German, to the statements of which the student is referred. Six consecutive subjects are offered.

SUBJECTS.

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French Reader; reading of short works of modern authors in prose and verse. *Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate French. Reading, Grammar, and Composition. Review of grammatical principles, especially with reference to syntax; exercise in composition; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Tuesday, Thursday, and Saturday at 8.45.*

PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language in a preparatory school.

****3.** First half-year: course for the rapid reading of modern authors, Thiers, Taine, de Vigny. Second half-year: Introductory work in Seventeenth-Century Classics, Corneille, Racine, Molière, Boileau, with collateral reading concerning the period. Review of grammatical principles. *Monday, Wednesday, and Friday at 8.45.*

PROFESSOR LEWIS.

For entering students, French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century. Crane's *Société Française au XVII^e Siècle*; Molière, *Les Précieuses Ridicules*, *Les Femmes Savantes*; Rostand, *Cyrano de Bergerac*; Madame de Sévigné; Madame de la Fayette; Bernardin, *Morceaux Choisis des Classiques Français du XVII^e Siècle*; collateral reading from modern critics. *Monday, Wednesday, and Friday at 8.45.*

PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half year: the drama, poetry, the novel, philosophical essays, and criticism. Second half year: introductory course in the history of French literature, presented by lectures and collateral reading. *Monday, Wednesday, and Friday at 2 or 3.*

PROFESSOR LEWIS AND PROFESSOR WADK.

Either half-year may count as a half subject.

[**6.** A systematic study of French literature from the beginning to the middle of the nineteenth century. The manuals of Demogeot and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for a more detailed study.

PROFESSOR FAY.]

ITALIAN.

PROFESSOR FAY.

The work offered in Italian is open to those only who have had two years of college study in French. With such

previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature.

SUBJECT.

1. Grandgent's Grammar and Composition; Bowen's Reader; De Amicis; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR FAY.

LATIN.

PROFESSOR DENISON.

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had a profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented by lectures on appropriate topics, and are illustrated from time to time by the stereopticon. Latin 1, 2, either 3 or 4, and two or more composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, will be given, with due announcement, at intervals of two or more years. Courses 3, 4, 7, and all designated by numbers above 7, are suitable for graduate students. Such students will, however, be expected to do an extra amount of work in these subjects, and may be required to prepare theses or make other special investigations.

SUBJECTS.

*1. Livy (Books I and II, or XXI and XXII); Cicero (De Senectute, or De Amicitia); Horace (Odes and Epodes); reading at sight; lectures on suitable topics. *Tuesday, Thursday, and Saturday at 10.45 and 11.45.*

Latin 1 is introductory to all later subjects.

2. Tacitus (Germania or Agricola); Terence (Phormio); Petronius (Cena Trimalchionis); Apuleius; Pliny (selected letters); reading at sight; lectures on suitable topics. *Tuesday, Thursday, and Saturday at 9.45.*

Open to students who have completed Latin 1.

3. Tacitus (selections from the Annals); Suetonius (selections); Juvenal (principal Satires); Martial (selected Epigrams); reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early Empire. *Monday, Wednesday, and Friday at 11.45.*

[4. Horace (Satires and Epistles); Plautus (two plays); readings from Latin prose and verse to illustrate Roman life and literature; reading at sight. *Monday, Wednesday, and Friday at 11.45.*]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-courses in either half-year. Subject 3 is offered in 1900-1901.

*5. Latin Composition. Translation of English narrative, based on the prose authors read in Latin 1. *One hour a week for the year, to be arranged with the instructor.*

6. Latin Composition. *One hour a week, to be arranged with the instructor.*

Latin 6 is open to students who have completed Latin 5, and may be taken most profitably in connection with Latin 2. Particular attention will be paid to Latin idiom.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week for the year, to be arranged with the instructor.*

8. Catullus and the Elegiac Poets, Tibullus, Propertius, and Ovid. Open to students who have completed Latin 1. Ability to read easy German will be desirable, although not absolutely essential. Schulze's Römische Elegiker will be used. *Three hours a week (second half-year), to be arranged with the instructor.*

[Not to be given in 1901-1902.]

[9. The Private Life of the Romans.]

[10. Selection from the Poets of the Empire, such as Manilius, Phædrus, Seneca, Lucan, Valerius Flaccus, Statius, Ausonius, and Claudianus. Gudeman's Latin Literature of the Empire, Vol. II, will be used. This subject may be taken as a half course in either half-year.]

[To be given in 1901-1902.]

The attention of students of Latin is called to the subject, Classical Archæology.

GREEK.

PROFESSOR SCHNEIDER AND PROFESSOR WADE.

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS.

*1. Elementary. Goodwin's Grammar; Xenophon (*Anabasis*); Homer. *Double subject. Monday, Wednesday, and Friday at 11.45, and Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that

their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

****2.** Xenophon, or Plato; Herodotus; Homer (Odyssey); Euripides, one play. *Monday, Wednesday, and Friday at 2.*

PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek. The works read in Greek 2 are chosen primarily to help the student to a mastery of the language, and to give those who can carry the study of Greek no further some knowledge of the branches of Greek literature treated. The literary characteristics of the authors read will be dwelt upon, and lectures on suitable topics will be given.

3. Lysias (selected orations); Antiphon (Herodes and Choroentes); Demosthenes (On the Crown); Euripides (Bacchantes); Æschylus (Seven against Thebes); reading at sight. *Tuesday, Thursday, and Saturday at 11.45.*

PROFESSOR WADE.

The works read in Greek 3 vary from year to year. The aim of this subject is to present systematically the dramatic and forensic literature of classical Greece. The reading is accompanied by lectures.

4. Theocritus (Idylls and Epigrams); Pindar (Olympian and Pythian Odes); Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Hours to be arranged with the instructor.*

PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato (Symposium); Aristotle (Ethics, Books I-IV, or Politics); reading at sight in Herodotus and Lucian. *Hours to be arranged with the instructor.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented by a general survey of Greek philosophy.

****6.** Greek Composition; practice in sight reading. *One hour a week. Hour to be arranged with the instructor.*

PROFESSOR WADE.

Greek 6 may be taken by any one who has had the equivalent of Greek 1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition; reading at sight; outside study of some Greek author, including the preparation of an essay. For 1900-1901 the subject is the Homeric Hymns. *Hours to be arranged with the instructor.* PROFESSOR WADE.

Greek 7 is intended primarily for Sophomores making Greek their major. Other students properly qualified will be admitted.

Greek 8. Greek Poetry, from Homer to the Anthology. A rapid survey of the less-known Greek poets. Portions of the following will be read: Homeric Hymns, the *Batrachomyomachia*, Lyric and Elegiac Poets, Bacchylides, Apollonius Rhodius, Theocritus, Babrius, and the Anthology. Some attention will be paid to imitations in Latin, English, and French Literature. Open to students who have passed Greek 3, and to members of Greek 3 on consultation. *Two hours a week for the first half-year. Hours to be arranged.* PROFESSOR WADE.

Greek 9. Greek 8, continued during the second half-year. *Two hours a week. Hours to be arranged.* PROFESSOR WADE.

10. Advanced Work, for the degree of Master of Arts. Courses will be arranged on consultation with the instructor, to suit the needs of the student. A reading knowledge of French and German is necessary. The preparation of a thesis is required. Properly qualified undergraduates may be admitted. *Hours to be arranged.* PROFESSOR WADE.

The attention of students is called to the following announcement of courses in Classical Archæology.

CLASSICAL ARCHÆOLOGY.

The fields of Greek and Roman Archæology and Art are so intimately related that they cannot be adequately treated as separate subjects. The following connected courses are therefore offered with a view to presenting a reasonably complete survey of ancient architecture, painting, and sculpture.

1. Greek, Roman, and Etruscan Architecture; Ancient Painting. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

PROFESSOR DENISON.

[Not to be given in 1901-1902.]

2. Greek and Roman Sculpture. *Monday, Wednesday, and Friday at 10.45 (second half-year).* PROFESSOR WADE.

The work in both of these subjects will consist of lectures, collateral reading, and papers. There will be full illustration by photographs, stereopticon, etc.

[Not to be given in 1901-1902.]

PHILOSOPHY.

PROFESSOR CUSHMAN.

The department offers work in all the traditional branches of the subject, adapted to the needs of many kinds of students. To the specialist in the sciences it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it offers the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The department offers no graduate work as yet.

In all cases where there is opportunity the department advises first for every student the introduction to the history of philosophy (Philosophy 1). The other subjects may then follow at the student's option, or as his specific needs seem to demand. The primer of philosophy is its history, and the natural way is to read this first. To follow this natural course makes of philosophy an inductive science.

Students choosing philosophy as their major department will be expected to take at least three term hours in each of these subjects, History of Philosophy, Logic, and Psychology, and to make up three years of continuous work. The department offers half-year subjects in every case. Philosophy may be taken by all students except Freshmen and first-year Specials.

The Philosophical Conference holds public meetings at least three times during the year. It gives the opportunity to the students of discussing philosophical subjects collat-

eral with the regular work, and sometimes invites eminent persons to address it on special subjects.

SUBJECTS.

*1. Introductory course. History of Philosophy; the pre-Socratic Greeks; Socrates, Plato, and Aristotle; the periods of the Renaissance (1500-1689) and the Enlightenment (1689-1781); German Idealism from Kant to Hegel (1781-1820), and Modern Evolution Theories; lectures and examinations. *Monday, Wednesday, and Friday at 9.45 (first half-year).* PROFESSOR CUSHMAN.

**2. Psychology. Lectures and elementary experiments. The relation between mind and body, introduced by a short study of the anatomy of the brain. *Monday, Wednesday, and Friday at 9.45 (second half-year).* PROFESSOR CUSHMAN.

Before taking courses 5-11, the student must have satisfactorily completed the elementary courses 1 and 2.

*3. Logic, especially Deductive, with an elementary consideration of Fallacies. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR SHIPMAN.

4. Logic (advanced), especially Inductive. *Tuesday, Thursday, and Saturday 10.45 (first half-year).* PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have, with distinction, completed Philosophy 3. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

5. Ethics: the Theory of Morals, considered constructively, with special application to Literary Criticism. Lectures, theses, text-book. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).* PROFESSOR CUSHMAN.

In the first part of this course, the lectures will review and criticise the leading theories of morals, to the end of helping the class to some independent construction in this field. In the last part of the course, to further this end, the class will apply and test such constructed theory by criticising characters in literature. In 1899, the characters criticised were in Ibsen's *Little Eyolf*, Meredith's *The Ordeal of Richard Feverel*, Besant's *The Changeling*, Thackeray's *Vanity Fair*.

6. Ethics, Practical: contemporary problems, education, charities, temperance, socialism. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR TOUSEY.

Philosophy 6 follows 5 in natural sequence.

7. The Philosophy of Religion: classification of theological questions, with critical and constructive work by the class; lectures; wide reading. *Monday, Wednesday, and Friday at 3 (first half-year).* PROFESSOR KNIGHT.

8. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, and text-book. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

PROFESSOR CUSHMAN.

The problems discussed are those fundamental to science, ethics, æsthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

9. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Monday, Wednesday, and Friday at 10.45 (second half-year).* PROFESSOR CUSHMAN.

[10. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume. Lectures, prescribed reading. *Monday, Wednesday, and Friday at 10.45 (second half-year).*

PROFESSOR CUSHMAN.]

[This course will be given in 1901-1902.]

[11. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment; Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Monday, Wednesday, and Friday at 10.45 (second half-year).*

PROFESSOR CUSHMAN.]

[This course will be given in 1902-1903.]

HISTORY.

PROFESSOR BOLLES AND PROFESSOR EVANS.

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day prob-

lems. To this end a thorough scientific knowledge of essential facts, and the arrangement of these facts in their true proportions, is sought, while in some subjects opportunity is offered for individual work and closer examination of details. History 1 is the introductory subject by which the student is prepared for more specialized work. History 2 to 5 open to students well qualified for historical study an opportunity to develop their knowledge of important epochs in the history of Europe. History 6 and 7 are devoted to England, and 9 to our own country. The character of the work is briefly explained in connection with the appended statement of subjects.

1. General European History. An introduction to the study of History, and an outline of the history of Europe to the downfall of Napoleon. Text, Adams's European History, accompanied by lectures, assigned reading, and the preparation of themes. *Monday, Wednesday, and Friday at 8.45.* PROFESSOR EVANS.

History 1 must precede all other subjects in History. It will not be accepted for an advanced degree. It is open to any student who has fulfilled the entrance requirements in History.

[2. The Renaissance and the Reformation. A study of the intellectual and religious movements extending from the thirteenth to the sixteenth centuries. (*First half-year*). PROFESSOR EVANS.]

[3. The Seventeenth and Eighteenth Centuries. An account of the history of the continent during the religious wars, and the struggle for the balance of power. (*Second half-year*). PROFESSOR EVANS.]

[4. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. (*First half-year*). PROFESSOR EVANS.]

[5. The Nineteenth Century. One of the chief purposes of this course is to furnish some explanation of present-day questions in European politics. (*Second half-year*). PROFESSOR EVANS.]

6. General English History to the Reign of Victoria. Lectures, and class discussion. *Tuesday, Wednesday, and Friday at 9.45 (first half-year).* PROFESSOR BOLLES.

Open to students who have taken History 1.

7. Studies of Periods in English History, including the Reign of Victoria. Lectures and class discussions. *Tuesday, Wednesday, and Friday at 9.45 (second half-year)*. PROFESSOR BOLLES.

Open to Students who have taken History 1.

8. The Comparative History of Religions. Egypt, Babylon, Nineveh; Parseeism, Hinduism, Buddhism, Confucianism, Mohammedanism; with a study of the civilizations represented by these religions. *Tuesday, Thursday, and Saturday at 11.45 (first half-year)*. PROFESSOR KNIGHT.

9. American History, from the Colonies to the First President. Lectures. *Wednesday, Thursday, and Friday at 3.00 (second half-year)*. PROFESSOR BOLLES.

Open to students who have taken History 1.

10. Seminary in History. Investigation of selected topics from the sources. During the year 1900-1901 the subjects of study will be taken from American history. Open only to students who receive special permission from the instructor. Full subject: fortnightly meetings, at an hour to be fixed after the organization of the class. PROFESSOR EVANS.

POLITICAL SCIENCE.

PRESIDENT CAPEN AND PROFESSORS METCALF AND EVANS.

The subjects in the department of Political Science are, for the sake of clearness, divided into two groups: Government and Economics.

Government 1 is introductory, the aim being a general acquaintance with the elements of political science. In the study of Ancient Law the growth of jural conceptions is traced. International Law follows in the second term.

In the division of Economics the aim is to provide, by systematically arranged courses of instruction, a training in the most important branches of political economy, beginning with the elements of the science, and passing by degrees to work of the investigative order. Economics 1 is introductory to the other courses, but endeavors, at the same time, to satisfy the wants of those who seek simply a general knowledge of Economics. The advanced subjects (3, 4, 5, and 6) presuppose preparation on the part

of the student. A knowledge of general, constitutional, and political history is desirable.

Government.

1. Principles of Government. The government of the United States is used to illustrate the fundamental principles of politics. *Monday, Wednesday, and Friday at 9.45 (first half-year).*

PROFESSOR EVANS.

2. Ancient Law. Roman Law. Lectures, text-book work, and discussions. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

PRESIDENT CAPEN.

3. Constitutional Law. A study of the Constitution of the United States as interpreted in the chief decisions of the Supreme Court. *Monday, Wednesday, and Friday at 9.45 (second half-year).*

PROFESSOR EVANS.

4. Political Institutions of Europe. A comparative study of the governments of the leading states of Europe. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).*

PROFESSOR EVANS.

5. International Law. An outline of its principles and most important applications. *Tuesday, Thursday, and Saturday at 9.45 (second half-year).*

PRESIDENT CAPEN OR PROFESSOR EVANS.

Economics.

1. Principles of Political Economy. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on trade unions, co-operation, socialism; money, banking, finance, and public debts. Text-book, discussions, collateral reading, and written tests.

This course, or its equivalent, must precede all other courses in Economics. *Tuesday, Thursday, and Saturday at 8.45.*

PROFESSOR METCALF.

2. Outlines of Economics. Elementary Course. A study of the chief problems of production, exchange, and consumption of wealth. This course is designed for students of Engineering, and the treatment will be concrete and practical. Bullock's Introduction to the Study of Economics will be used as a guide. Lectures, discussions, and written tests. *Monday, Wednesday, and Friday at 8.45 (first half-year).*

PROFESSOR METCALF.

3. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the industrial revolution and the rise of the factory system; the growth

of foreign trade; free trade and protection; commercial crises; transportation problems; concentration of labor and capital; money, banking, and finance. Lectures, collateral reading, and reports. *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR METCALF.

4. Finance:

(a). Principles of Public Finance. Public expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American literature on finance. Adams's Public Finance will be used as a guide. Lectures, discussions, collateral reading, and theses. *Monday, Wednesday, and Friday at 9.45 (first half-year).*

PROFESSOR METCALF.

(b). Financial History of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. *Monday, Wednesday, and Friday at 9.45 (second half-year).*

PROFESSOR METCALF.

5. History and Literature of Political Economy. An account of the beginnings, the progress, and the various schools of economic science. Examination of the theories of the Mercantilists and the Physiocrats, followed by a study of Adam Smith and the European and American writers of the nineteenth century. Ingram's History of Political Economy is used as a guide. Lectures, collateral reading, and theses. *Monday, Wednesday, and Friday at 8.45 (second half-year).*

PROFESSOR METCALF.

6. Seminary in Political Science. This course is designed for advanced students who are specializing in Political Science, and who are carrying on research upon special topics. Questions in government, politics, statistics, economics, or finance may be selected. *Hours to be arranged with the instructor.*

PROFESSOR METCALF.

MATHEMATICS.

PROFESSOR BROWN AND ASSISTANT PROFESSOR WREN.

The study of Mathematics is required through the first year. The branches taught are: Algebra, through the subjects included in most college text-books preceding the theory of equations; Solid and Spherical Geometry; Plane

Trigonometry, with its applications. Two objects are kept constantly in view : first, to acquire and hold certain mathematical facts for future use ; secondly and mainly, to train the mathematical faculties so that the student may acquire the ability to deduce mathematical truths from those previously established. The classroom work of the instructors is a combination of lectures with questioning of the students to ascertain that the points presented are duly comprehended.

An opportunity to continue the study of Algebra and also a course in Determinants are offered at the middle of the first year. Plane Analytic Geometry is offered as an elective for the first half of the second year. This study may be continued with higher plane curves and Geometry of three dimensions during the second half of the second year. Differential and Integral Calculus is required for three half-years in the Engineering courses, and the subject is open as an elective to any student who has taken Plane Analytic Geometry.

SUBJECTS.

1. College Algebra ; Solid Geometry ; Plane Trigonometry ; Applications of Plane Trigonometry. *Monday, Wednesday, and Friday at 8.45 (Division 1). At 9.45 (Division 2).*

PROFESSOR BROWN AND MR. H. G. CHASE.

2. Advanced Algebra. Theory of Equations and Elements of Determinants. *Tuesday, Thursday, and Saturday at 11.45 (second half-year).*

PROFESSOR BROWN OR MR. H. G. CHASE.

3. Plane Analytic Geometry. Open to students who have taken Mathematics I. *Monday, Wednesday, and Friday at 11.45 (first half-year).*

PROFESSOR BROWN.

4. Spherical Trigonometry ; Projections of Triangles ; use of Richards's Manual with the Sphere. Open to students who have had Mathematics I. *(First half-year).*

PROFESSOR BROWN.

5. Higher Plane Curves ; Analytic Geometry of Three Dimensions. *Monday, Wednesday, and Friday at 9.45 (second half-year).*

PROFESSOR BROWN.

6. Differential and Integral Calculus. *Three hours a week (second half-year).* PROFESSOR BROWN.

7. Differential and Integral Calculus, continued. *Three hours a week (first half-year).* PROFESSOR BROWN.

8. Differential and Integral Calculus (advanced course). *Three hours a week (second half-year).*

PROFESSOR BROWN OR ASSISTANT PROFESSOR WREN.

9. Weld's Theory of Determinants; Hanus's Elements of Determinants. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR WREN.

10. Differential Equations. *Two hours a week (second half-year).*

PROFESSOR BROWN OR ASSISTANT PROFESSOR WREN.

[See Engineering Courses.]

11. Method of Least Squares. *Two hours a week (second half-year).* ASSISTANT PROFESSOR WREN.

12. Quaternions. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR WREN.

[See Engineering Courses.]

13. The Theory of the Potential Function. *Three hours a week (second half-year).* ASSISTANT PROFESSOR WREN.

[See Engineering Courses.]

[*Drawing 1 (DESCRIPTIVE GEOMETRY)* is also a distinctively mathematical subject. For further subjects essentially mathematical, see subject 4 in the department of Drawing, and subjects 1 and 6 in the department of Civil and Mechanical Engineering.]

PHYSICS.

PROFESSOR DOLBEAR.

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book is used, critical comments and much additional material are given, and frequent lectures are given with experiments. The aim is to present the science of Physics not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent re-

turns to these first principles. The rapid development of electrical science having quite outstripped text-books, this subject is treated wholly by lectures.

An elective course is offered of about twenty-five lectures upon the relations of Physics to other branches of natural science, introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in Physics. Spencer's First Principles is read, and its subject-matter thoroughly discussed.

In the Physical Laboratory beginners are given Stewart and Gee's Practical Physics, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satisfactory results are obtained. Glazebrook and Shaw's Practical Physics is followed on the subjects of sound, heat, and light, Pickering's Manipulation and Kohlrausch's Measurements being also used to a limited extent. In electricity and magnetism Stewart and Gee's second volume is mainly followed, supplemented, in the case of Engineering students, by parts of Gray's Absolute Measurements and Kempe's Testing. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. Students who are preparing themselves to become teachers of Physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS.

1. General Physics. Lectures, recitations, and experiments. To be taken by students choosing Physics for their prescribed science subject, and introductory to other subjects in Physics. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR DOLBEAR.

3. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Monday, Wednesday, and Friday at 11.45 (second half-year).* MR. H. G. CHASE.

4. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Six hours a week (second half-year).* MR. H. G. CHASE.

5. Electricity: Theory of Measurements. *Three hours a week (first half-year).* Electrical Laboratory: Simple Measurements and Tests. *Two hours a week.* MR. H. G. CHASE.

6. Relation of Physics to Sociology. Lectures. *Tuesday and Thursday at 3 (first half-year).* PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tuesday and Thursday at 3 (second half-year).* PROFESSOR DOLBEAR.

CHEMISTRY.

PROFESSOR MICHAEL AND PROFESSOR DURKEE.

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of Engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated by numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented by recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in Qualitative Analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Subject 6 is intended to teach the use of

the blowpipe in chemistry, together with the tests that are of special value in determinative mineralogy. Crystallography is taken up in connection with this subject. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts and minerals, and in the advanced subject 5, the more complicated minerals, ores, commercial and food products. The analysis of organic substances is included in subject 5. Gas Analysis (subject 9) is taught by lectures and laboratory work, principally in the use of technical methods. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The course of lectures for metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of Organic Chemistry begins with a course of lectures, illustrated by experiments and recitations, which cover the general principles and methods, and include description of the most important organic compounds. For those who wish to specialize in this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more

researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15 are especially designed to lead up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special course in chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted.

SUBJECTS.

1. General Chemistry. Lectures, recitations, and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations, *on Tuesday and Thursday from 2 to 5; also on Saturday, 8.45 to 11.45, for students of the Special Course in Chemistry (first half-year).* PROFESSOR DURKEE.

3. Qualitative Analysis. Acids; Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations, *on Tuesday and Thursday from 2 to 5; also on Saturday, 8.45 to 11.45, for students of the Special Course in Chemistry (second half-year).* PROFESSOR DURKEE.

4. Quantitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

5. Quantitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Three hours a week.* PROFESSOR DURKEE.

[6. Crystallography and Determinative Mineralogy. Open to students who have taken 1, 2, and 3. Lectures and laboratory work. *Two hours a week (first half-year).*]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Two hours a week (second half-year).* MR. WHITEHORNE.

8. Metallurgy. Lectures and recitations. Open to students who have taken 1. *Two hours a week (second half-year).*

PROFESSOR DURKEE.

9. Gas Analysis. Lectures and laboratory work. Open to students who have taken 1, 2, 3, and 4. *One hour a week.*

DR. GARNER.

10. Organic Chemistry. Lectures and recitations. Open to students who have taken 1. *Three hours a week (first half-year).*

DR. LEIGHTON.

11. Theoretical Chemistry. Lectures and recitations. Open to students who have taken 1. *Two hours a week (second half-year).*

DR. LEIGHTON.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Open to students who have taken 1 and 11. *Three hours a week (first half-year).* PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Open to students who have taken 1 and 10. *Three hours a week.* PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors.*

PROFESSOR MICHAEL AND DR. LEIGHTON.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors.*

PROFESSOR MICHAEL AND DR. LEIGHTON.

16. Original investigations in Chemistry. *Hours to be arranged by the instructor.* PROFESSOR MICHAEL.

17. Discussion on chemical subjects and recent investigations. *One hour a week.*

BIOLOGY.

PROFESSOR KINGSLEY AND DOCTOR LAMBERT.

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient: the student is also required to study a selected series of animals to the satisfac-

tion of the instructor in order to obtain a passing mark. All students receiving the rank D will receive credit for work done, but the mark C must be obtained each year in order to continue work in the department.

The equipment of the department is good. There are three well-lighted laboratories furnished with every requisite for good work, including microscopes, microtomes, reagents, as well as abundant material for illustration and dissection. One of the laboratories is devoted to elementary biology, one to advanced undergraduate work, and one to graduate students. There is also a department library containing over 1,200 volumes and over 3,300 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars per term for each course, payable in advance.

SUBJECTS.

1. General Biology. Lectures, *Tuesday and Thursday at 11.45*; laboratory work, *Tuesday and Thursday from 2 to 4*.

PROFESSOR KINGSLEY AND DR. LAMBERT.

This subject is required of all who elect work in this department, and is a pre-requisite for the other biological courses and for Geology 2.

2. Morphology of Invertebrates. Lectures, *Monday and Friday at 4*; laboratory work, *Monday and Friday from 2 to 4 (first half-year)*.

PROFESSOR KINGSLEY.

3. Morphology of Vertebrates. Continuation of Biology 2, at the same hours (*second half-year*).

PROFESSOR KINGSLEY.

4. Elementary Physiology. Lectures, demonstrations, and recitations. *Tuesday, Thursday, and Saturday at 8.45 (first half-year)*.

PROFESSOR KINGSLEY.

The students in the Medical Preparatory course take this subject at the Medical School.

Subjects 1 to 4 will not be accepted as work for advanced degrees.

5. Histology: a study of the normal tissues of the vertebrates, including microscopical technique. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (first half-year)*.

PROFESSOR KINGSLEY.

6. Embryology, chiefly of *Amblystoma* and Chick. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday 2 to 4 (second half-year)*. One lecture and four hours of laboratory work.

PROFESSOR KINGSLEY.

7. Journal Club. Devoted to reading abstracts of recent biological papers, etc. This subject does not count toward a degree. *Fortnightly, Fridays at 11.45*.

8. Special Work. Six hours of laboratory work for the year in the investigation of some special problem. PROFESSOR KINGSLEY.

9. General Morphology. This subject is divided into three parts, which may be taken separately.

(a). The Structure of the Nervous System of Vertebrates. This subject is intended as an introduction to Psychology, and is recommended to all who are intending to take Philosophy 2 in the second half year. It is open to all, without previous work in the department. Lecture, *Monday at 8.45*; laboratory work, *Monday from 2 to 4 (first half-year)*.

PROFESSOR KINGSLEY.

(b). Comparative Osteology. Lecture, *Friday at 8.45*; laboratory work, *Friday from 2 to 4 (first half-year)*.

PROFESSOR KINGSLEY.

(c). Morphological problems, with collateral reading and reports. Lecture, *Wednesday at 8.45 (first half-year)*; *Monday and Friday at 8.45 (second half-year)*.

PROFESSOR KINGSLEY.

Subjects 5 to 9 are intended for graduates and undergraduates. 9 (b) and 9 (c) can be taken only after Biology 3, and require a familiarity with German.

10. Botany. Lectures, *Monday and Friday at 8.45*; laboratory, *Monday and Friday, 9.45 to 11.45*.

DR. LAMBERT.

GEOLOGY.

For the present the course in Geology will be given in the second half-year. It is required of students in the courses in General Science and in Biology. It is open to others who have passed in Physics 1, Chemistry 1 and 6, and Biology 1.

SUBJECT.

2. Geology. *Tuesday, Thursday, and Saturday at 9.45 (second half-year).* PROFESSOR KINGSLEY.

ASTRONOMY.

1. Recitations and Lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tuesday and Thursday at 11.45 (first half-year).* PROFESSOR DOLBEAR.

DRAWING AND SHOPWORK.

PROFESSOR ANTHONY.

Drawing.

The object of the studies pursued in this department is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him graphically to express his ideas in the most simple and direct manner. The machine drawings are

made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work and in the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

SUBJECTS.

[See Engineering Courses.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Four hours a week (second half-year).* PROFESSOR ANTHONY.
2. Technical Sketching. *One hour† a week (first half-year).* PROFESSOR ANTHONY.
3. Mechanical Drawing. *Two hours* a week for the year.* PROFESSOR ANTHONY.
4. Kinematics. *Three hours a week (first half-year).* PROFESSOR ANTHONY.
5. Machine Drawing (Elementary). *Two hourst a week (second half-year).* PROFESSOR ANTHONY.
6. Machine Drawing (Advanced). *Two hourst a week (first half-year).* MR. C. H. CHASE.
7. Elements of Design. *One hour* a week (second half-year).* PROFESSOR ANTHONY.
8. Machine Design (Advanced). *Two hours* a week (second half-year).* PROFESSOR ANTHONY.

Shopwork.

As the engineer, or draftsman, must have clearly in mind the processes by which a design is to become a reality, it is a primary object of the course in shopwork to familiarize the student with the various processes of construction and the manipulation of materials. The object is not to produce expert workmen, although a reasonable amount of skill is required, but to give such training as will best serve in the direction and supervision of the work

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

of others. The course is progressive, comprising the subjects enumerated below, and maintaining a close relation with the courses in drawing and design. Much of the work in design is executed in the shop from drawings prepared in the drafting-rooms.

SUBJECTS.

[See Engineering Courses.]

1. Carpentry and Turning. *Two periods * a week (first half-year).*
MR. C. H. CHASE.
2. Pattern-making and Moulding. *One period a week (second half-year).*
MR. C. H. CHASE.
3. Forging. *One period a week (second half-year).*
4. Vise and Machine Tools. *Two periods a week (second half-year).*
MR. C. H. CHASE.
5. Project Work. *Three periods a week (second half-year).*
MR. C. H. CHASE.

CIVIL AND MECHANICAL ENGINEERING.

PROFESSOR BRAY.

There are offered in this department such selected subjects from the Engineering courses as may be profitably pursued by students in the courses in Liberal Arts who have taken the necessary preliminary work in mathematics, and who may desire to shape their work with reference to pursuing study in Engineering after graduation. Such students will also find subjects adapted to their plans in the departments of Mathematics, Physics, Chemistry, and Drawing. Fuller details of the work in Engineering will be found in the statement of the full Engineering Courses. For all the subjects given below, Algebra, Geometry, and Trigonometry are an indispensable preparation.

SUBJECTS.

1. Land Surveying. Lectures, recitations, and field practice. Plotting and calculating. *Two hours a week (first half-year).*
ASSISTANT PROFESSOR SANBORN.

* Each period is equal to three hours.

2. Topography. Lectures, recitations, drawing, and field practice. *Two hours a week.* ASSISTANT PROFESSOR SANBORN.

This subject must be preceded by 1.

3. City and Mining Surveying. Recitations, field and office work. *Three hours a week (second half-year).*

ASSISTANT PROFESSOR SANBORN.

4. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours a week (first half-year).*

PROFESSOR BRAY.

5. Steam Enginery; practice in the management of engines and boilers, valve-setting, etc. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

6. Applied Mechanics. *Three hours a week (second and first half-years).*

PROFESSOR BRAY.

Subjects 5 and 6 must be preceded by Calculus.

7. Applied Mechanics (Laboratory). *One hour a week (first half year).*

ASSISTANT PROFESSOR SANBORN.

8. Mechanical Laboratory. *Four hours a week (second half-year).*

PROFESSOR BRAY.

9. Roads and Railroads, to be taken with 4. *Three hours a week (first half-year); three hours a week (second half-year).*

PROFESSOR BRAY.

10. Hydraulics. *Three hours a week (first half-year).*

PROFESSOR BRAY.

11. Bridges and Roofs. *Two hours a week (first half-year).*

PROFESSOR BRAY.

12. Masonry Construction. *Three hours a week (second half-year).*

PROFESSOR BRAY.

13. Sanitary Engineering. *Three hours a week (second half-year).*

ASSISTANT PROFESSOR SANBORN.

ELECTRICAL ENGINEERING.

PROFESSOR HOOPER.

To students in the College of Liberal Arts who may desire to elect advanced work in Electricity, the following subjects are offered. All require a good working knowl-

edge of Algebra, Geometry, and Trigonometry, while 4 and 5 require a like acquaintance with Calculus and Differential Equations.

SUBJECTS.

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).* PROFESSOR HOOPER.
2. Electrical Problems. *Two hours a week (second half-year).* PROFESSOR HOOPER.
3. Electrical Laboratory (advanced course). *Three hours a week for the year.* PROFESSOR HOOPER.
4. Electricity: Alternating Currents. *Four hours a week (first half-year); three hours a week (second half-year).* PROFESSOR HOOPER.
5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).* PROFESSOR HOOPER.
6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).* PROFESSOR HOOPER.
7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).* PROFESSOR HOOPER.
8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).* PROFESSOR HOOPER.

MUSIC.

PROFESSOR LEWIS.

The department offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The courses in Harmony and in General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS.

1. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony. Collateral reading concerning the lives of Bach, Händel, Haydn, Mozart, and Beethoven. *Tuesday at 3, Thursday from 2 to 4.* PROFESSOR LEWIS.

THE FINE ARTS.**ASSISTANT PROFESSOR WHITTEMORE.**

The department stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Tuesday and Saturday at 10.45.*

ASSISTANT PROFESSOR WHITTEMORE.

[2. The Fine Arts of the Middle Ages and the Renaissance. *Tuesday and Saturday at 10.45.*

ASSISTANT PROFESSOR WHITTEMORE.]

PHYSICAL TRAINING.**DR. STROUD AND MISS CARVILL.**

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular coördination are among the objects sought. In addition to class drills in free movements, with wands, dumb-bells, and Indian clubs, and exercises in squads on the various kinds of fixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest and strongest can engage in it with profit.

Courses in Science.

The special courses in General Science, Biology, Chemistry, and Medical Preparatory studies lead to the degree of Bachelor of Science, are entered through Examination Group V, and are intended for graduates of general high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the courses in Arts and Philosophy, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies in the last two years, so as to make the total one hundred and twenty-eight term hours.

Unless otherwise described, the time assigned to subjects in the subjoined statement is given in term hours. Two laboratory hours ordinarily count as one term hour.

COURSE IN GENERAL SCIENCE.

PROFESSOR KINGSLEY.

Freshman Year.

English 1. The Theory and Practice of Composition. Lectures, discussion of papers, conferences. *Three hours a week (first half-year). Monday, Wednesday, and Friday at 11.45.*

PROFESSOR SHIPMAN AND ASSISTANTS.

English 2. A Study of Expression. Lectures, readings, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (second half-year).*

ASSISTANT PROFESSOR WHITTEMORE AND MR. THOMPSON.

German 1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Seeligmann, *Altes und Neues*; Zschokke, *Der zerbrochene Krug*; Buchheim's *Balladen und Romanzen*.

Tuesday, Thursday, and Saturday at 9.45. PROFESSOR FAY.

or

German 2. Intermediate German. Reading, Grammar, and Composition. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Riehl, *Der Fluch der Schönheit*; Seume, *Mein Leben*; Freytag, *Aus dem Staat Friedrichs des Grossen*; Scheffel, *Der Trompeter von Säckingen*. *Tuesday, Thursday, and Saturday at 8.45.* MR. DEMETER.

French 1. Elementary French. The essentials of grammar, with composition; Grandgent's *Short Grammar*; a *French Reader*; reading of short works of modern authors, in prose and verse. *Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR LEWIS AND MR. EARLE.

or

French 2. Intermediate French. Reading, Grammar, and Composition. Review of grammatical principles, especially with reference to syntax; exercise in composition; reading of modern fiction and drama, such as Merimée's *Colomba* and Sandeau's *Mademoiselle de la Seiglière*. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR LEWIS AND MR. EARLE.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or with German will take German 2 and French 1.

Physics 1. General Physics. Lectures, recitations, and experiments. *Monday, Wednesday, and Friday at 10.45.*

PROFESSOR DOLBEAR.

Chemistry 1.* General Chemistry. Lectures, recitations, and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

Biology 1. General Biology. Lectures. *Tuesday and Thursday at 11.45*; laboratory work. *Tuesday and Thursday from 2 to 4.*

PROFESSOR KINGSLEY AND DR. LAMBERT.

Physical Training.

Sophomore Year.

English. *Two hours for the first half-year and two hours for the second half-year*, completing the regular requirement in English. (See p. 59.)

* For program hours, when these are not given, see the statement of hours under "Departments of Instruction," pp. 57-93.

German 2. As above.

or

German 3. First half-year. Course for the rapid reading of modern prose. *Monday, Wednesday, and Friday at 9.45.*

PROFESSOR FAY AND MR. DEMETER.

and

Biological German. Second half-year. Reading of some important biological work intended to familiarize the student with the vocabulary of biology. *Two hours a week.* PROFESSOR KINGSLEY.

French 2. (For those entering with German.)

Biology 2 and 3. General Biology. Lectures, *Monday and Friday at 4*; laboratory work (four hours), *Monday, Wednesday, and Friday from 2 to 4.*

PROFESSOR KINGSLEY.

Mathematics 1. College Algebra; Solid Geometry; Plane Trigonometry. Applications of Plane Trigonometry. *Monday, Wednesday and Friday at 8.45 (Division 1); at 9.45 (Division 2).*

PROFESSOR BROWN AND MR. H. G. CHASE.

Chemistry 2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tuesday and Thursday from 2 to 5 (first half-year).*

PROFESSOR DURKEE.

Chemistry 3. Qualitative Analysis. Acids; Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tuesday and Thursday from 2 to 5 (second half-year).*

PROFESSOR DURKEE.

Physical Training.

Junior Year.

German 3 and Biological German (for those entering with French) as above.

Physics 4. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Six hours a week (second half-year).* MR. H. G. CHASE.

Chemistry 10. Organic Chemistry. Lectures and recitations. Open to students who have taken 1. *Three hours a week (first half-year).*

DR. LEIGHTON.

Biology 4. Elementary Physiology. Lectures, demonstrations, and recitations. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).*

PROFESSOR KINGSLEY.

Biology 5. Histology. A study of the normal tissues of the vertebrates, including microscopical technique. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (first half-year)*.
PROFESSOR KINGSLEY.

Biology 6. Embryology. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (second half-year)*.
PROFESSOR KINGSLEY.

Senior Year.

Philosophy 1. Introductory course. History of Philosophy. Lectures and examinations. *Monday, Wednesday, and Friday at 9.45 (first half-year)*.
PROFESSOR CUSHMAN.

Philosophy 2. Psychology. Lectures and elementary experiments. *Monday, Wednesday, and Friday at 9.45 (second half-year)*.
PROFESSOR CUSHMAN.

Biology 10. Botany. Lectures, *Monday and Friday at 8.45*; laboratory, *Monday and Friday, 2.00 to 4.00*.
DR. LAMBERT.

[**Chemistry 6. Crystallography and Determinative Mineralogy.** Lectures and laboratory work. *Two hours a week (first half-year)*.]

[This course is given in alternate years. It is not given in 1900-1901.]

Geology 2. Geology. *Tuesday, Thursday, and Saturday at 9.45*.
PROFESSOR KINGSLEY.

Special work (six term hours) in Biology, Chemistry, or Electricity.

COURSE IN BIOLOGY.

PROFESSOR KINGSLEY.

Freshman Year.

As in the Freshman year of the course in General Science.

Sophomore Year.

As in the Sophomore year of the course in General Science.

Junior Year.

German 3 (first half-year), **Biological German** (second half-year, for those entering with French), **Biology 4, 5, and 6**, as in the Junior year of the course in General Science.

Philosophy 1 and 2, as in the Senior year of the course in General Science.

German 2. As above.

or

German 3. First half-year. Course for the rapid reading of modern prose. *Monday, Wednesday, and Friday at 9.45.*

PROFESSOR FAY AND MR. DEMETER.

and

Biological German. Second half-year. Reading of some important biological work intended to familiarize the student with the vocabulary of biology. *Two hours a week.* PROFESSOR KINGSLEY.

French 2. (For those entering with German.)

Biology 2 and 3. General Biology. Lectures, *Monday and Friday at 4*; laboratory work (four hours), *Monday, Wednesday, and Friday from 2 to 4.*

PROFESSOR KINGSLEY.

Mathematics 1. College Algebra; Solid Geometry; Plane Trigonometry. Applications of Plane Trigonometry. *Monday, Wednesday and Friday at 8.45 (Division 1); at 9.45 (Division 2).*

PROFESSOR BROWN AND MR. H. G. CHASE.

Chemistry 2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tuesday and Thursday from 2 to 5 (first half-year).*

PROFESSOR DURKEE.

Chemistry 3. Qualitative Analysis. Acids; Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tuesday and Thursday from 2 to 5 (second half-year).*

PROFESSOR DURKEE.

Physical Training.

Junior Year.

German 3 and Biological German (for those entering with French) as above.

Physics 4. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Six hours a week (second half-year).* MR. H. G. CHASE.

Chemistry 10. Organic Chemistry. Lectures and recitations. Open to students who have taken 1. *Three hours a week (first half-year).*

DR. LEIGHTON.

Biology 4. Elementary Physiology. Lectures, demonstrations, and recitations. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).*

PROFESSOR KINGSLEY.

Biology 5. Histology. A study of the normal tissues of the vertebrates, including microscopical technique. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (first half-year)*.
PROFESSOR KINGSLEY.

Biology 6. Embryology. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (second half-year)*.
PROFESSOR KINGSLEY.

Senior Year.

Philosophy 1. Introductory course. History of Philosophy. Lectures and examinations. *Monday, Wednesday, and Friday at 9.45 (first half-year)*.
PROFESSOR CUSHMAN.

Philosophy 2. Psychology. Lectures and elementary experiments. *Monday, Wednesday, and Friday at 9.45 (second half-year)*.
PROFESSOR CUSHMAN.

Biology 10. Botany. Lectures, *Monday and Friday at 8.45*; laboratory, *Monday and Friday, 2.00 to 4.00*.
DR. LAMBERT.

[**Chemistry 6. Crystallography and Determinative Mineralogy.** Lectures and laboratory work. *Two hours a week (first half-year)*.]

[This course is given in alternate years. It is not given in 1900-1901.]

Geology 2. Geology. *Tuesday, Thursday, and Saturday at 9.45*.
PROFESSOR KINGSLEY.

Special work (six term hours) in Biology, Chemistry, or Electricity.

COURSE IN BIOLOGY.

PROFESSOR KINGSLEY.

Freshman Year.

As in the Freshman year of the course in General Science.

Sophomore Year.

As in the Sophomore year of the course in General Science.

Junior Year.

German 3 (first half-year), **Biological German** (second half-year, for those entering with French), **Biology 4, 5, and 6**, as in the Junior year of the course in General Science.

Philosophy 1 and 2, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. Lectures and recitations. *Three hours a week (first half year).* DR. LEIGHTON.

Senior Year.

Chemistry 6 and Geology 2, as in the Senior year of the course in General Science.

Biology 9. General Morphology. Three lectures each week upon the anatomy, physiology, and embryology of selected groups, with discussion of special problems. PROFESSOR KINGSLEY.

Human Anatomy (at the Tufts Medical School).

Special Research in Biology, including dissertation. *Twelve hours.*

MEDICAL PREPARATORY COURSE.

PROFESSOR KINGSLEY.

Freshman Year.

As in the Freshman year of the course in General Science.

Sophomore Year.

As in the Sophomore year of the course in General Science.

Junior Year.

As in the Junior year of the course in Biology.

Senior Year.

Economics 1. Principles of Political Economy. Text-book, discussions, collateral reading, and written tests. *Tuesday, Thursday, and Saturday at 8.45.* PROFESSOR METCALF.

Philosophy 3. Logic, especially deductive. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR SHIPMAN.

Philosophy 5. Ethics, the Theory of Morals. Theses, lectures, and text-book. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).* PROFESSOR CUSHMAN.

Human Anatomy and Physiology (at Tufts Medical School).

Medical Chemistry (at Tufts Medical School).

COURSE IN CHEMISTRY.

PROFESSOR DURKEE.

Freshman Year.

English 1. The Theory and Practice of Composition. Lectures,

discussion of papers, conferences. *Three hours a week (first half-year). Monday, Wednesday, and Friday at 11.45.*

PROFESSOR SHIPMAN AND ASSISTANTS.

2. A Study of Expression. Lectures, readings, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (second half-year).*

ASSISTANT PROFESSOR WHITTEMORE AND MR. THOMPSON.

German 1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Seeligmann, Altes und Neues; Zschokke, Der Zerbrochene Krug; Buchheim's Balladen und Romanzen. *Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR FAY.

or

German 2. Intermediate German. Reading of modern prose and poetry. Grammar and composition. *Tuesday, Thursday, and Saturday at 8.45.* MR. DEMETER.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1.* Algebra, Solid Geometry, and Trigonometry.

PROFESSOR BROWN AND MR. H. G. CHASE.

Physics 1. General Physics. Lectures, recitations, and experiments. *Monday, Wednesday, and Friday at 10.45.*

PROFESSOR DOLBEAR.

Chemistry 1. Inorganic Chemistry. Lectures, recitations, and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

Drawing. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

Elective. *Three hours a week (second half-year).*

Physical Training.

Sophomore Year.

English. *Two hours for the first half-year, and two hours for the second half-year, completing the regular requirement in English.* (See p. 59.)

German 2 (as above), or

* For program hours, when these are not given, see the statement of hours under "Departments of Instruction," pp. 57-93.

French 1. Elementary French. The essentials of grammar with composition: reading of short works of modern authors in prose and verse. *Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR LEWIS AND MR. EARLE.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 4. Physical Laboratory. Mechanics, Sound, Light, and Heat. *Three hours a week (second half-year).* MR. H. G. CHASE.

Chemistry 2. Basic Qualitative Analysis. Laboratory work, with lectures and recitations. *Three hours a week (first half-year).*

PROFESSOR DURKEE.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. Laboratory work, with recitations. *Three hours a week (second half-year).*

PROFESSOR DURKEE.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. Lectures and laboratory work. *Three hours a week.*

PROFESSOR DURKEE.

Chemistry 10. Organic Chemistry. Lectures and recitations. *Three hours a week (first half-year).*

DR. LEIGHTON.

Chemistry 11. Theoretical Chemistry. Lectures and recitations. *Two hours a week (second half-year).*

DR. LEIGHTON.

Physical Training.

Junior Year.

Chemistry 5. Quantitative Analysis (advanced). Analysis of Minerals, Ores, Water, Food Products, and Organic Analysis. *Three hours a week.*

PROFESSOR DURKEE.

[**Chemistry 6.** Crystallography and Determinative Mineralogy. Lectures and recitations. *Two hours a week (first half-year).*]

[This course is given in alternate years. It is not given in 1900-1901.]

Chemistry 8. Metallurgy. Lectures, and recitations. *Two hours a week (second half-year).*

PROFESSOR DURKEE.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced). Lectures and recitations. *Three hours a week (first half-year).*

PROFESSOR MICHAEL.

Chemistry 13. Organic Chemistry (advanced). Lectures and recitations. *Three hours a week (second half-year).*

PROFESSOR MICHAEL.

Chemistry 14. Laboratory work with inorganic preparations. *Two hours a week (first half-year).*

PROFESSOR MICHAEL AND DR. LEIGHTON.

Chemistry 15. Laboratory work in organic analysis; determination of physical constants and molecular weights; preparation of organic compounds. *Three hours a week (second half-year).*

PROFESSOR MICHAEL AND DR. LEIGHTON.

Biology 1. General Biology. Lectures and laboratory work. *Three hours a week.* PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 4. Elementary Physiology. Lectures, demonstrations, and recitations. *Three hours a week (first half-year).*

PROFESSOR KINGSLEY.

Elective. *Three hours a week (second half-year).*

Senior Year.

Economics 1. Principles of Political Economy. Text-book, discussions, collateral reading, and written tests. *Tuesday, Thursday, and Saturday at 8.45.*

PROFESSOR METCALF.

Chemistry 7. Fire Assay. *Two hours a week (second half-year).*

MR. WHITEHORNE.

Chemistry 9. Gas Analysis. Lectures and laboratory work. *One hour a week (first half-year).*

DR. GARNER.

Chemistry 13. Organic Chemistry (advanced). Lectures and recitations. *Three hours a week (first half-year).*

PROFESSOR MICHAEL.

Elective. *Three hours a week (first half-year).*

Research and Thesis. *Four hours a week (first half-year); ten hours a week (second half-year).*

PROFESSOR MICHAEL.

Department of Engineering.

ADMINISTRATIVE BOARD.

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INSTRUCTORS.

BENJAMIN G. BROWN, A.M., <i>Walker Professor of Mathematics.</i>	38 Professors Row.
WILLIAM R. SHIPMAN, A.M., D.D., LL.D., <i>Goldthwaite Professor of Rhetoric and Professor of Logic.</i>	Talbot Avenue.
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 372 Massachusetts Ave., Cambridge.
Assistant Professor of English.

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Assistant Professor of Mathematics.

CHARLES H. CHASE, S.B., Stoneham.
Instructor in Shopwork.

HARRY GRAY CHASE, B.E.E., 16 Professors Row.
Instructor in Electrical Engineering.

CHARLES C. STROUD, A.B., M.D., 72 Curtis St.
Instructor in Physical Training.

VIRGIL L. LEIGHTON, A.M., PH.D., Medford Hillside.
Instructor in Organic Chemistry.

SAMUEL C. EARLE, A.M., Electric Avenue.
Instructor in French.

WIGHTMAN W. GARNER, A.B., PH.D., 20 West Hall.
Instructor in Chemistry.

HENRI F. CHADWICK, S.B., 4 West Hall.
Assistant in Electrical Engineering.

WILLIAM R. WHITEHORNE, A.M., 14 Elmwood St., Somerville.
Assistant in Drawing.

Engineering Courses.

Four courses are provided in Engineering: Civil Engineering, Mechanical Engineering, Electrical Engineering, and Chemical Engineering.

FRESHMAN YEAR.

[Alike for all courses.]

FIRST TERM.	No.	SECOND TERM.	No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Carpentry, Turning, and Foundry	40	Pattern Making	42
Physics	70	Physics	70
English	140	English	141
French or	161	French or	161
German	166	German	166
Physical Training	185	Physical Training	185

CIVIL ENGINEERING.

The four years' course leading to the degree of Bachelor of Science in Civil Engineering gives a grounding in the principles underlying general engineering. Instruction is given by text-books, lectures, laboratory work, and practice in the field and drafting-room. Thoroughness is accomplished by numerous practical applications rather than by the exclusive study of theory.

Specialization is not allowed to encroach upon the time required for the training in fundamental principles, and it is carried on systematically only in the thesis work of Senior year. Considerable freedom is allowed, however, during the Junior and Senior years, in electing courses from other departments. By this means ample opportunity is offered for obtaining a broad engineering education.

An outline of the course of study may be given as follows: Mathematics through the first three years, elective in the Senior year; English and Modern Languages through the first two years, afterwards elective; Drawing theoretical and applied, throughout the course; Shop Work, the first two years; Electrical Laboratory, Junior year; Chemistry, the second and third years, otherwise elective; Plane, topographical and railroad surveying, the second, third, and fourth years; Hydraulics, Masonry, Bridges, Railroads, Analytic and Applied Mechanics, Structural Design, and Sanitary Engineering, during the Junior or Senior year; also electives in Junior and Senior years, in such subjects as Machine Design, Mineralogy, Dynamo-Electric Machinery, Bridge Design, and Steam Engineering.

CIVIL ENGINEERING.

Freshman year, alike for all courses. See page 103.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Forging	44
Mechanism	25	General Chemistry	50
General Chemistry	50	Physical Laboratory	72
Surveying	90	Surveying	91
English 142, 143, 144, or 145		English 145, 146, or 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185
		Machine Drawing (elective)	26

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Qualitative Analysis	52	Electrical Laboratory	73
Electrical Laboratory	73	Topography	98
Topography	92	Masonry or Sanitary Eng'g	111
Pure Mechanics	112	Applied Mechanics	109
Mechanical Laboratory	114	<i>*One of the following</i>	113
Steam Engine	120	<i>electives :</i>	
<i>*One of the following</i>		Machine Drawing	26
<i>electives :</i>		Machine Design	28
Machine Drawing (elementary)	26	Machine Shop	45
Machine Drawing (advanced)	27	Dynamo-Electric Machinery	77
Machine Shop	45	Qualitative Analysis	53
Electricity and Magnetism	74	Metallurgy	57
English		English	
Modern Languages		Modern Languages	
		Steam Engineering	121

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Railroad Surveying	94	Highways	93
Railroad Engineering	95	Railroad Engineering	95
Roofs and Bridges	97	Sanitary Eng'g or Masonry	109
Hydraulics	110	Structural Design	111
Structural Design	115	Thesis	115
Political Economy	180	<i>*One of the following</i>	
<i>*One of the following</i>		<i>electives :</i>	
<i>electives :</i>		Mathematics	
Mathematics		Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Mineralogy	59	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Electricity	82	Telegraph and Telephone	87
Graphic Statics	99	Bridge Design	98
English		English	
Modern Languages		Modern Languages	

* Electives must be approved by the Department.

MECHANICAL ENGINEERING.

It is the aim in the course in Mechanical Engineering so to instruct the student in the various subjects that he will be enabled to apply scientific principles to the design of a machine or the proper arrangement of any mechanical plant. In the earlier part of his studies the work common to all engineering courses embraces the careful study of Mathematics, Physics, and Chemistry, which have important bearing upon his subsequent study of the properties of materials used by the engineer. Elementary Technical Drawing and Descriptive Geometry receive careful attention at the beginning of the course. The latter is further developed in its application to practical problems and the study of mechanism.

A systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves, and use of the indicator, are carefully considered. This is followed by a brief course in Thermodynamics, including the mechanical theory of heat, and the properties of gases and steam. Steam Engineering includes the study of the steam-engine, compound and multiple expansion, and of steam boilers of various types; the determination of proper proportions for developing a required power; the estimation of sizes of parts requisite for strength and endurance; the study of the effect and balance of reciprocating parts, and the various kinds of valve motions. Practice is given in engine and boiler testing, and a design with working drawings is required of each student.

Numerous electives are offered in civil and electrical engineering.

Instruction in Carpentry, Wood-turning, Moulding, Pattern-making, Forging, Vise, and Machine-tool work is given during the course.

MECHANICAL ENGINEERING.

Freshman year, alike for all courses. See page 103.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144 or 145		English 145, 146, or 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185
		Surveying (elective)	91

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Machine Shop	45
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Mechanical Laboratory	114	Steam Engineering	121
Steam Engine	120	<i>*One of the following</i>	
<i>*One of the following</i>		<i>Electives:</i>	
Electricity and Magnetism	74	Qualitative Analysis	53
Topography	92	Dynamo-Electric Machinery	77
English		Topography	92
Modern Languages		Sanitary Engineering	109
		Masonry	111
		English	
		Modern Languages	

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Machine Design	29	Engineering Laboratory	123
Hydraulics	110	Structural Design	115
Steam Engineering	122	Thesis	
Political Economy	180	<i>*Two of the following</i>	
<i>*Two of the following</i>		<i>Electives:</i>	
<i>Electives:</i>		Mathematics	
Mathematics	61	Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Gas Analysis	63	Theoretical Chemistry	69
Electricity	82	Electricity	83
Roofs and Bridges	97	Telegraph and Telephone	87
Graphic Statics	99	Bridge Design	98
English		Sanitary Engineering	109
Modern Languages		Masonry	111
		English	
		Modern Languages	

* Electives must be approved by the Department.

ELECTRICAL ENGINEERING.

The aim of the course in Electrical Engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, Mathematics and Drawing are pursued through nearly the entire course.

Physics and Mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of Electricity by means of practical work in the Electrical Laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, and the efficiency of electrical machinery and the location of losses are carefully studied.

The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in net-work of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and poly-phase, is fully developed; and the many important practical problems thus evolved are carefully treated both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING.

Freshman year, alike for all courses. See page 103.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144, or 145		English 145, 146, or 147	
French or	162	French or.	162
German	167	German	167
Physical Training	185	Physical Training	185
		Surveying (elective)	91

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Electrical Laboratory	73
Electrical Laboratory	73	Electricity	76
Pure Mechanics	112	Dynamo-Electric Machinery	77
Mechanical Laboratory	114	Applied Mechanics	113
Steam Engine	120	<i>*One of the following</i>	
<i>*One of the following</i>		<i>electives:</i>	
Electricity and Magnetism	74	Machine Shop	45
Topography	92	Qualitative Analysis	53
English		Metallurgy	57
Modern Languages		Topography	92
		Sanitary Engineering	109
		Masonry	111
		English	
		Modern Languages	

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Electricity	82	Electricity	83
Electrical Laboratory	79	Electrical Laboratory	79
Hydraulics	110	Telegraph and Telephone	87
Political Economy	130	Thesis	
<i>*Two of the following</i>		<i>*Two of the following</i>	
<i>electives:</i>		<i>electives:</i>	
Mathematics		Mathematics	
Machine Design	29	Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Gas Analysis	63	Assaying	67
Mineralogy	59	Theoretical Chemistry	69
Dynamo Design	88	Highways	93
Mathematics of Alternating		Railroad Engineering	95
Currents	84	Bridge Design	98
Railroad Engineering	95	Sanitary Engineering	109
Roofs and Bridges	97	Masonry	111
Graphic Statics	99	Structural Design	115
English		English	
Modern Languages		Modern Languages	

* Electives must be approved by the Department.

CHEMICAL ENGINEERING.

The course in Chemical Engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering. The subjects in this course have been arranged to give the training in Mathematics, Physics, Chemistry, and Mechanical Engineering that will assist the graduates of the department in solving the mechanical and chemical problems that may present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in Chemical and advanced Mechanical Engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those in the Mechanical Engineering course. In Chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the Chemical Engineering course find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING.

Freshman year, alike for all courses. See page 103.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144, or 145		English 145, 146, or 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Qualitative Analysis	52	Qualitative Analysis	53
Organic Chemistry	55	Metallurgy	57
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Mechanical Laboratory	114	<i>*Two of the following electives:</i>	
Steam Engine	120	Machine Shop	45
		Dynamo-Electric Machinery	77
		Sanitary Engineering	109
		Masonry	111

SENIOR YEAR.

FIRST TERM	No.	SECOND TERM.	No.
Machine Drawing	27	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Quantitative Analysis	61	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Hydraulics	110	Thesis	
Political Economy	180	<i>*One of the following electives:</i>	
<i>*Two of the following electives:</i>		Mathematics	
Mathematics		Machine Design	28
Electricity	82	Sanitary Engineering	109
Roofs and Bridges	97	Masonry	111
Graphic Statics	99	Structural Design	115
English		English	
Modern Languages		Modern Languages	

* Electives must be approved by the Department.

Departments.

MATHEMATICS.

The required work in Mathematics covers the first three years of the course. During this period the courses pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra, the subjects usually found in college Algebras previous to the Theory of Equations; in Trigonometry, the ordinary formulæ of relations between angles, and the applications in the solution of right and oblique triangles; in Analytic Geometry, the properties of the straight line and the conic sections; in Calculus, the most important principles, such as are embodied in Osborne's Calculus, supplemented by a course of lectures on the applications of the subject to physical and mechanical phenomena; in Differential Equations, the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire advanced work the following list of electives is offered: Advanced Algebra, involving the Theory of Equations and solutions of higher degree equations; Spherical Trigonometry; Solid Analytic Geometry; the Theory of Determinants; and the Theory of Least Squares. Vector Analysis and the Theory of the Potential Function are offered, to allow the student to obtain the necessary instruments for investigating the more complex physical phenomena.

MATHEMATICS.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
1	Algebra	1	1	4	1	Wren	C, E, M, Ch
2	Advanced Algebra, Theory of Equations .	1	2	3	1	Brown	Elective
3	Plane Trigonometry	1	1	2	1	Wren	C, E, M, Ch
4	Spherical Trigonometry	4	1	3	1	Brown	Elective
5	Plane Analytic Geometry	1	2	*	1	Wren	C, E, M, Ch
6	Solid Analytic Geometry	4	2	3	1	Brown	Elective
7	Differential and Integral Calculus	2	1, 2	3	1	Wren	C, E, M, Ch
8	Advanced Differential and Integral Calculus	3	1	2	1	Wren	C, E, M, Ch
9	Differential Equations	3	2	2	1	Wren	C, E, M, Ch
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	4	2	2	1	Wren	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

* Three exercises a week for eight weeks, and four exercises a week for nine weeks.

DRAWING.

The threefold object of the studies pursued in this department is : first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing ; second, a study of the technique of graphic expression as employed in the modern drafting-room ; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The course in Mechanical Drawing comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts.

Descriptive Geometry is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The course includes the elements of warped surfaces.

Lettering and Technical Sketching are a necessary preparation for the courses in machine and topographical drawing.

The classes in both the Elementary and Advanced Machine Drawing are conducted according to the systems of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism, theoretical and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In the advanced course the student is required to design the parts of simple mechanism from data and sketches only, while in thesis design he is made responsible for the entire design and estimates.

DRAWING.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
20	Mechanical Drawing	1	1, 2	2	3	Anthony	C, E, M, Ch
21	Descriptive Geometry	1	2	*	1	Anthony	C, E, M. Ch
23	Technical Sketching	2	1	1	2	Anthony	C, E, M, Ch
25	Mechanism	2	1	{ 2 1 }	{ 1 3 }	Anthony	C, E, M, Ch
26	Elementary Machine Drawing	2	2	2	2	Anthony	E, M, Ch
27	Advanced Machine Drawing	3	1	2	2	C. H. Chase	E, M, Ch†
28	Elementary Machine Design	3	2	1	3	Anthony	E, M
29	Advanced Machine Design	4	1	2	3	Anthony	M

* Four exercises a week for eight weeks, and three exercises a week for nine weeks. † Fourth Year.

SHOPWORK.

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction.

Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work of the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

An examination of the course will show, first, a half-year given to acquiring experience in the use of the ordinary tools in carpentry, and the use of the tools and lathe in wood-turning. Following this, moulding or foundry work is taken up in preparation for pattern-making, which constitutes the remainder of the Freshman course.

Forging gives an introduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding.

In the Junior year instruction in metal work is continued, with vise and machine tools.

Project work, which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the course in machine-shop instruction upon special lines.

SHOPWORK.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
40	{ Carpentry Wood-Turning Foundry }	1	1	2	3	C. H. Chase	C, E, M, Ch
42	Pattern-Making	1	2	1	3	C. H. Chase	C, E, M, Ch
44	Forging	2	2	1	3	{ C. H. Chase R. B. Moore }	C, E, M
45	{ Chipping and Filing Machine Tools }	3	2	2	3	C. H. Chase	M
48	Project	4	2	3	3	C. H. Chase	Elective

* Carpentry, 8 weeks; Wood-Turning, 4 weeks; Foundry, 4 weeks. † Civil Engineers may elect No. 45 during the first term.

CHEMISTRY.

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical, descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) comprises lectures and recitations, covering the general principles of descriptive and theoretical organic chemistry.

Mineralogy (59) is taught by lectures, recitations, and laboratory work. The subject is intended to show the use of the blow-pipe and of other tests that are of special value in determining minerals. Crystallography is considered.

Metallurgy (57) is a course of lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. Lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	Preparation Required.	INSTRUCTOR.	COURSE.
50	General Chemistry (Chemistry 1) . .	2	1, 2	3	1, 2		Durkee	C, E, M, Ch
52	Qualitative Analysis (Chemistry 2) . .	3	1	2	3	50	Durkee	C, E, M, Ch
53	Qualitative Analysis (Chemistry 3) . .	3	2	2	3	{ 50 } 52	Durkee	Ch
55	Organic Chemistry (Chemistry 10) . .	3	1	3	1	50	Leighton	Ch
57	Metallurgy (Chemistry 8)	3	2	2	1	50	Durkee	Ch
59	*Mineralogy (Chemistry 6)	4	1	2	1, 2	{ 50 } 52	Leighton	Ch
61	Quantitative Analysis (Chemistry 5) . .	4	1, 2	2	3	53	Durkee	Ch
63	Gas Analysis (Chemistry 9)	4	1	1	2	50	Garner	Ch
65	Applied Chemistry	4	2	2	1	{ 50 } 55	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Whitehorne	Ch
69	Theoretical Chemistry (Chemistry 9) . .	4	2	2	1	50	Leighton	Ch

* Chemistry 6 is not given in 1900-1901, but will be given in 1901-1902.

PHYSICS AND ELECTRICITY.

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of Physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

The laboratory work (72) begins with the more important quantitative determinations in mechanics, sound, light, and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

An elective elementary course in Electricity and Magnetism (74) is offered for those who may wish to supplement the lecture course in General Physics.

In the laboratory course in Electricity (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The course in Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo-room.

Great importance is attached to the course in Electrical Calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C, E, M, Ch
72	Physical Laboratory	2	2	2	3	{ H. G. Chase Chadwick }	C, E, M, Ch
73	Electrical Laboratory	3	{ 1 2 }	3 2	2 2	{ H. G. Chase Chadwick }	C, E, M, Ch
74	Electricity and Magnetism	3	1	3	1	H. G. Chase	Elective
76	Electricity (Problems)	3	2	2	1	Chadwick	E
77	Dynamo-Electric Machinery	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	3	2	{ Hooper Chadwick }	E

PHYSICS AND ELECTRICITY.

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electromagnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery (79) is carried on in the laboratory. The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such works as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the course called "Electrical Topics" (85), each student selects, or has assigned to him, several subjects, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his work in the form of lectures to the class. It is believed that this course will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The course on the Telegraph and Telephone (87) outlines the evolution of these arts, and deals exhaustively with the principles involved.

The course in Dynamo Design (88) makes practical application of the principles previously acquired in course 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This course must be taken in connection with Advanced Machine Design (29).

PHYSICS AND ELECTRICITY.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
82	Electricity (Current Induction)	4	1	4	1	Hooper	E
83	Electricity (Alternating Currents)	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment.	4	1	3	1	Hooper	Elective
85	Electrical Topics	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone	4	2	2	1	Dolbear	Elective
88	Dynamo Design	4	1	3	1	Hooper	Elective

ENGINEERING—CIVIL AND MECHANICAL.

Surveying (90, 91) includes principally the elements of general surveying: use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurements of areas and volumes, miscellaneous field problems, computations, and drawing.

Topography (92) follows Surveying (90, 91) and comprises careful triangulation from stations near the college, accurate computations, location of contours, plotting and topographical drawing, determination of true north and south line, hydrographic surveying, measurement of flow of water and computation of horse-power available, and brief time is given to Mining Surveying, Plane Table Surveying, and determination of latitude, longitude, and time.

Highways (93) considers the location and construction of country roads and city streets; the physical properties of earth, broken stone, and various pavements used as road surface; economy of traction, grades, construction, and maintenance. Work is given by text-books, lectures, and highway reports.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and the like, together with office work based upon the data obtained in the field.

Railroad Engineering (95) embraces the theory and practice of location, construction, maintenance, and operation of railroads, and is carried on in the recitation and drafting rooms, and in the field. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses. Students form field parties and obtain data for constructing a map and profile. The paper location is then put upon the ground, and staked for construction.

Roofs and Bridges (97) is largely a study of various methods of computing stresses in common forms of trusses.

Bridge Design (98) is an elective course in framed structures of wood and steel. It must be preceded by 97.

† First half of term.

* Last half of term.

ENGINEERING—CIVIL AND MECHANICAL.

Graphic Statics (99) begins with fundamental principles, and is extended to common engineering problems: forces and stresses in frames and arches, beams with various loads; inertia diagrams, graphic integration, centre of gravity of displacement, and graphic representation of laws and problems.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water-supply, disposal of sewage and garbage. Well-kept notes are required, and include the solution of elementary problems, reports of researches in engineering magazines and books, and accounts of visits that are made by the class to laboratories, waterworks, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels. It is accompanied by numerous problems.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, text-books, and inspection of work in process of construction.

ENGINEERING—CIVIL AND MECHANICAL.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
99	Graphic Statics	4	1	2	2, 3	Bray	Elective
109	*Sanitary Engineering	4	2	3	1	Sanborn	C
110	Hydraulics	4	1	3	1	Sanborn	C, E, M, Ch
111	*Masonry	3	2	3	1	Bray	C

* Subjects 109 and 111 are given in alternate years 109 will be given in 1900-1901, and 111 in 1901-1902.

ENGINEERING—CIVIL AND MECHANICAL.

Pure Mechanics (112) treats of the principles of force, motion, and work that lie at the foundation of many subsequent engineering problems. Engineering rather than mathematical problems are presented for solution, and regularly and steadily repetition is made of principles that are believed to be fundamental.

Applied Mechanics (113) is a continuation of 112, and particular attention is given to the strength of materials and of structures. Throughout the course, numerous practical problems illustrate the principles considered.

Mechanical Laboratory (114). Problems are set that require for analysis personal experimentation and correct application of the principles of Pure Mechanics (112). Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus. Results, recorded in well-kept note books, are submitted for critical examination.

Structural Design (115) is carried on in the lecture and drafting room, and is based upon the principles developed in the previous engineering studies. The methods pursued are precisely those of a regularly organized engineer's office.

In Steam Engine (120) the fundamental principle involved in the generation of steam is followed by a study of engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers. Practice is also given in engine and boiler testing.

ENGINEERING—CIVIL AND MECHANICAL.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
112	Pure Mechanics	3	1	3	1	Sanborn	C, E, M, Ch
113	Applied Mechanics	3	2	3	1	Bray	C, E, M, Ch
114	Mechanical Laboratory	3	1	1	2	Sanborn	C, E, M, Ch
115	Structural Design	4	1, 2	2	3	Bray	C
120	Steam Engine	3	1	3	1	Anthony	C, E, M, Ch
121	Steam Engineering	3	2	3	1	Bray	M
122	Steam Engineering	4	1	3	1	Bray	M
123	Engineering, Laboratory	4	2	3	2	Bray	M

ENGLISH.

English is required during the Freshman and Sophomore years. English 1 (140) is mainly for the purpose of learning to write with clearness and correctness. English 2 (141) completes the required English of the Freshman year, being a study of Expression. Lectures, themes, and conferences continue throughout the year.

The aim in English 3 (142) is to afford daily practice in writing, and thus to aid the student to gain ease and rapidness of expression. The subject is open only to those who have attained Grade B in English 2.

In English 4 (143) three kinds of writing—narration, description, and exposition—are discussed, and specimens from eminent authors are studied. Two themes each week are required.

English 5 (144) is Argumentative Composition : a study of its requirements as observed by successful writers, with constant practice by the student. The equivalent of two themes each week is required.

English 6 (145) involves the writing of essays, with special attention to the construction of extended discourse. There are weekly papers, plans, free discussion and individual criticism. This subject is offered for either half-year.

English 8 (146) has been added, to open the opportunity for the writing of daily themes during the second half-year.

English 11 (147) is designed to give a rapid survey of the development of English literature. Some written work will be required.

Subjects 140 and 141, with two hours for the first half-year, selected from 142, 143, 144, and 145, and two hours for the second half-year, selected from 145, 146, and 147, constitute the required work in English. All other subjects in English are open to the election of competent students of Engineering, subject to the conditions of their program engagements and the approval of the Administrative Board.

MODERN LANGUAGES.

An elementary knowledge of French or German, equivalent to No. 160 or 165, is required for admission to any course in Engineering.

The language offered in entrance will be continued during the first two years, unless the candidate for admission receives credit for the equivalent of Intermediate French (161) or Intermediate German (166), in which case he may take the alternative language for the two years ; or, if he passed during his Freshman year with high credit in Intermediate French or Intermediate German, he may take the alternative language during his Sophomore year. A student who has thus taken Elementary French (160) or Elementary German (165) in his Sophomore year will be expected to continue that language as an elective during his Junior year. Any subject in Modern Languages offered in the College may be elected by an engineer, properly qualified, during his Junior or Senior year, subject to the approval of the instructors in the elected subject. Those who take German pursue the regular college course, but for those engineers who take French separate subjects are offered, especially adapted to their needs. Elementary French (160) is the equivalent of the work required for the entrance examination. Intermediate French (161) comprises a review of verbs and of syntactical difficulties, and the reading of a considerable amount of ordinary prose, with special attention paid to idiomatic translation. Advanced French (162) includes reading of difficult and technical prose, to enable the student to read rapidly and accurately, without translation, such French as he will find of practical value.

POLITICAL ECONOMY.

This elementary course, designed especially for students of Engineering, aims at a systematic and comprehensive study of the fundamental principles of Political Economy, and comprises a study of some of the more important problems of modern industrial society.

MODERN LANGUAGES.

YEAR.	Term.	No. of Exercises Per Week.
1	1, 2	3
2	1, 2	3
3	1, 2	3
4	1, 2	3
1	1, 2	3
1	1, 2	3
2	1, 2	3
4	1, 2	3

OTHER SUBJECTS.

.	.	4	1	3
.	.	1, 2	1, 2†	3

* One language only is required. † From the middle of November to the middle of March.

PHYSICAL TRAINING.

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, dependent on his physical condition, and class work is also conducted.

The Graduate Department.

ADMINISTRATIVE BOARD.

ELMER H. CAPEN, A.M., D.D., LL.D., *President.*

AMOS E. DOLBEAR, M.E., PH.D.

GEORGE T. KNIGHT, A.M., D.D., *Secretary.*

J. STERLING KINGSLEY, S.D.

ARTHUR MICHAEL, A.M., PH.D.

WILLIAM L. HOOPER, A.M., PH.D.

WILLIAM K. DENISON, A.M.

INSTRUCTION.

Graduate instruction is given by the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES.

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are :—

ENGLISH,
MODERN LANGUAGES,
LATIN,
GREEK,
HISTORY,

MATHEMATICS,
CHEMISTRY,
BIOLOGY,
ELECTRICITY.

The Degree of Doctor of Philosophy is offered in Chemistry and Biology.

The conditions upon which the several degrees may be obtained, and the requirements of the departments, are stated below.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners appointed by the Executive Board of the Graduate Department.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Administrative Board of the Graduate Department before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year's study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similar grade, must complete the requirements for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at the College

for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Administrative Board of the Graduate Department.

The candidate for this degree must make a written application to the Secretary of the Administrative Board of the Graduate Department at least two years before the degree is to be conferred, and his thesis must be handed to the Secretary of the board at least two months before Commencement. For other conditions, applying to special departments, see pp. 140-141.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year's study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS.

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have taken, as under-

graduate work, the required number of hours selected from subjects 1 to 11, and in addition that, as major students in English, they will have fulfilled the conditions governing major students by making choice from those subjects in the department that are open to election. Subjects 7*, 17, 18, 19, 21, 22, 23, 24, 25, and 27, so far as these have not been anticipated as undergraduate work, may be counted toward the master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. (See pages 62 to 66.) To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 2 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will allow.

LATIN.—Candidates for the degree of Master of Arts in Latin must have completed satisfactorily Latin 1, 2, 3 or 4, and 5, or equivalents. Greek may be taken as minor work with Latin. A reading knowledge of German is essential, and of French and Italian is desirable, for students intending to take advanced work in Latin. Gradu-

* Subject numbers referred to in these statements are those used under "Departments of Instruction," pages 57 to 93.

ate students, when pursuing subjects especially designed for undergraduates, are expected to do an extra amount of work in them. The required thesis must embody the result of the special investigation of some author or period, or of some philological or archæological subject.

GREEK.—Candidates for the degree of Master of Arts in Greek must have completed Greek 1, 2, 3, and 5, or equivalents for these subjects. Latin may be taken as minor work with Greek. Graduate students will be expected to do work of advanced character, whether in classes with undergraduates or in special lines of investigation assigned by the instructor. The required thesis, on some approved topic, relating to some author, period, or philological problem, must give evidence of this advanced attainment. A reading knowledge of German and French is necessary for students intending to do advanced work in Greek.

HISTORY.—Every graduate student who intends to become a candidate for a degree must have taken History 1. Candidates for the degree of Master of Arts must be able to read French works, and a working knowledge of German is desirable, and may in some cases be necessary. Of the subjects announced in the program of this department, the more advanced subjects will be accepted as part of the work leading to the degree of Master of Arts. In addition to these subjects, work will be laid out for graduate students in such special lines as individuals may desire to pursue. Certain collateral subjects may be called for in such cases. Graduate students will be expected to do something in the way of independent investigation of a definite subject, the results to be embodied in the thesis required to obtain the degree.

MATHEMATICS.—Graduate students in Mathematics must have passed creditably the prescribed undergraduate work in this department,—Mathematics 1,—and may do graduate work from that point or from such more advanced

point as they may have attained. They are required to complete all the courses offered by the department, from Mathematics 2 to Mathematics 10, to receive the degree of Master of Arts.

CHEMISTRY.—Candidates for the degree of Master of Arts must have completed subjects 1, 2, 3, and 10, or their equivalents. Subjects 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, are offered for graduate students, and satisfactory work must be done in at least five of these subjects. The candidate must present an acceptable thesis and pass satisfactory examinations in all of the subjects studied.

BIOLOGY.—Candidates for the degree of Master of Arts in Biology must have already done work equivalent to Biology 2, 3, and 4; or, lacking that, they must take omitted subjects in addition to their graduate work. The work will be done on the lines of comparative anatomy, histology, or embryology, and will include a thesis embodying original research.

ELECTRICITY.—The candidate for the master's degree in Electricity must have done substantially the work in that department required of the Bachelor of Electrical Engineering. This involves the election during his undergraduate course of studies in this department, if it is expected that the degree will be obtained within one year of graduate study.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

CHEMISTRY.—Candidates must be able to translate scientific German readily and accurately before beginning their work, and must have already taken subjects 1 to 7 inclusive, 9 and 10, or equivalent work. Unless previously qualified, they must take subjects 11, 12, 13, 14, 15, and 17, and devote at least one year to subject 16. Examinations in the above subjects must be satisfactorily

passed, and a thesis embodying an original investigation in Chemistry must be presented.

A well-equipped laboratory is open to graduate students who may wish to pursue special lines of research, and the department is prepared to offer every facility for the encouragement of original investigations.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in Animal Morphology for at least three years, two of which must be in residence, and they must have passed one summer at some sea-shore biological station. They must pass an examination on General Zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

FELLOWSHIPS.

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the trustees have established two Fellowships in Natural History, to be known respectively as the Olmstead and Miner Fellowships. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History upon recommendation of the graduate Faculty. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, of an ability to profit by the work to be done, and testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject under the direction of the professors in charge of the departments of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June ; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

TUITION.

The tuition fee for the whole course for the degree of Master of Arts, Civil Engineer, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as under-graduate.

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BALLOU HALL.

Buildings and Equipment.

BUILDINGS.

The College buildings are fifteen in number: Ballou Hall, containing recitation-rooms, the Faculty room, and the offices of the President, the Registrar, and the Bursar; Barnum Museum, containing the natural history collections and the biological and geological laboratories and lecture-room; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building, containing the chemical laboratories and lecture-room; three dormitories,—East Hall, West Hall, Dean Hall; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall, and the Allen House, for women students. The Bromfield-Pearson School building is available for the technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences.

LIBRARY.

The library contains about forty thousand bound volumes and over eighteen thousand pamphlets. It includes the private library of the late Rev. William H. Ryder, D.D., of Chicago. The College regularly receives over two hundred periodicals. By favor of Senator Hoar the library has been made a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, and English. The average annual increase by donation and purchase, for the last five

years, has been about twelve hundred volumes. The Shipman fund, contributed by the alumni for the purchase of new books, amounted at the close of the year 1899-1900 to two thousand dollars. The library is open to all members of the College every day in the week, except Sunday, from 8.45 A.M. to 12.45 P.M., and from 2 to 5 P.M. During the college year 1899-1900, from November to April, it was also open four evenings in the week, from 7 to 9.30 P.M.

In addition to the general library, there is in Miner Hall the collection of the Universalist Historical Society (thirty-five hundred volumes and several thousand pamphlets), to which, on application, students have free access; in the Barnum Museum is the department library of Natural History, numbering over twelve hundred volumes and thirty-three hundred pamphlets; and, besides the full collection of English works relating to music, in the library proper, there is in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of thirteen hundred volumes. There are altogether about forty-five thousand bound volumes available for use.

BARNUM MUSEUM.

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who also gave the College a fund for its maintainance, and later, by bequest, gave funds for the erection of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals. Besides the more common forms, it contains many rare and interesting species, as Hatteria, Polypterus, Ceratodus, Protopterus, Cestracion, Amphioxus, Peripatus, and Pen-

tacrinus, the whole being well adapted for the purposes of instruction. During recent years a large series of skeletons of the lower vertebrates, as well as numbers of the Naples Station Invertebrates, have been placed on exhibition.

The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the Southern and Western States. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. Especially interesting are the nearly perfect skeletons of Ichthyosaurus and Plesiosaurus. The mineralogical collection, which has been assembled with great care, contains most of the species in very fine specimens.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments; the mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work; the biological laboratories are in the newly-erected wing. The laboratory for elementary work is equipped with all necessary facilities, while the laboratories (two in number) for advanced and research work have all the appliances and reagents needed for investigation on the lines of anatomy, histology, and embryology.

The department library of Natural History, recently established in the Barnum Museum, contains those publications which bear directly upon the work of the department. It already embraces over twelve hundred volumes and over thirty-three hundred pamphlets. Its future increase is in part provided for by the publications received in exchange for the TUFTS COLLEGE STUDIES. Most of the series of periodicals are complete since 1870.

GODDARD GYMNASIUM.

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is large and well equipped for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing-machines, a large wrestling mat, and facilities for basket-ball. The gallery contains a running-track, one thirty-second of a mile in length, and there is a well-lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

CHEMICAL BUILDING.

The building of the department of Chemistry contains laboratories for General Inorganic, Organic, Analytical, and Metallurgical Chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well equipped with apparatus and chemicals.

BROMFIELD-PEARSON BUILDING.

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school, and the department of drawing and shop work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There is a forge, moulding, pattern, and machine shop. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shop, and also serves for experimental work

in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

ROBINSON HALL.

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, chronograph, and spectrometer from the Société Genevoise; an Elliott Brothers' optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college work-shops.

A photometer room, 39 feet long, is provided, for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery

room, and with alternating current at 100 volts from the transformer.

The Transformer Room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There are also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

THE HALLS.

The Halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. Metcalf Hall, for women students, is a gift to the College by Mr. Albert Metcalf, of Newton. It is built of buff brick and gray limestone, is of simple and dignified architecture, and is equipped with every convenience. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' rooms on the second. Every safeguard of health is provided. The Allen House, on Sawyer Avenue, is for the accommodation of young women boarding themselves.

General Information.

RELIGIOUS OBSERVANCES.

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching services by frequent exchanges with neighboring clergymen. Attendance upon Sunday services is required: but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell, of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

TUFTS COLLEGE STUDIES.

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which will be issued as material is ready, will be distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding such exchanges should be addressed to the Librarian of Tufts College.

Seven numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Ar-

thropoda," by J. S. Kingsley; "Development of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in *Sterna Wilsoni*," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,' " by D. L. Maulsby, and "The Ossicula Auditus," by J. S. Kingsley.

The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION.

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by the Committee on Freshman Plans of Study, and in case of special students and members of the upper classes, by major instructors. Each student also furnishes such data as shall be required by the Registrar for class lists. Registration is made by classes as appears below, classification being as shown in the official list last printed:—

Seniors and *all* specials, 8.45 to 9.30 A.M.

Juniors, 9.30 to 10.15 A.M.

Sophomores, 10.15 to 11 A.M.

Freshmen, 11.00 A.M. to 12 M.

The Committee on Freshman Plans of Study will be in session for consultation from three to five P.M., on the second day of the fall examinations, and during the same

hours on the afternoon preceding the last day of the first term.

Students will make their plans of study subject to the following regulations:—

No Freshman shall take a program of more than nineteen term hours during the first half-year.

No student shall take a program of more than sixteen term hours who has, for the preceding half-year, received the mark D in courses aggregating three term hours, or the mark C in courses aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in courses aggregating three term hours, or the mark B in courses aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required. The following program for registration is followed, classification being based upon the last official printed list:—

Seniors, 8.45 to 9.15 A.M.

Juniors, 9.15 to 9.45 A.M.

Sophomores, 9.45 to 10.15 A.M.

Freshmen, 10.15 to 10.45 A.M.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed for their respective classes, or who fail to file with the proper official their plans of study and other required data before one o'clock P.M. on the day of registration. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROMOTIONS.

Students in the courses leading to the degrees of A.B. and Ph.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering Courses fail of promotion if they have deficiencies amounting to six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

Beginning with the college year 1900-1901, all conditions must be removed on or before June 1st of the Senior year.

All prescribed work must be completed by the end of the Junior year.

ADMISSION FROM OTHER COLLEGES.

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours' work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on the course of this College.

SPECIAL STUDENTS.

Students wishing to pursue a special course of study, who are not candidates for a degree, are subject to the following regulations :—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. Every Special Student having less than fifteen program hours a week will be required to obtain 70 per cent. in each subject; but those whose program hours number fifteen or more will be treated in the same manner as regular students.

4. A Special Student, on leaving College, shall be entitled to a Certificate giving the per cent. attained in each course pursued, and signed by the President and the Registrar.

5. Special Students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS.

The College year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no College exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week beginning on the Saturday before the first Thursday in April. On public holidays,—Washington's Birthday, the seventeenth of June, and Memorial Day,—the college exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day.

The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES.

In case of absence, from any cause, involving more than three consecutive program appointments, report is required to be made, either in person or by mail, messen-

ger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is still to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

Students intending to leave college or to drop a single course are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

EXPENSES.

The charge of instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students leaving College before the completion of any term are required to notify the Secretary of the Fac-

ulty at once. In case of failure to file such notification, tuition will be charged for the full term.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shopwork, except those in the engineering courses, are charged extra.

The college halls will accommodate two hundred and fifty men. Half room-rent, including heat, ranges from sixteen to eighty-five dollars. Metcalf Hall will accommodate twenty-four women. Allen House will accommodate six women, with conveniences for self-boardings. Students furnish their own rooms. A charge of *ten dollars* a year for the care of rooms is made to all persons rooming in any of the college buildings, except Paige Hall. Any damage done by students to college property is charged in the term bills.

Rooms in the college halls will be open for occupancy of students on or after the Wednesday of the week preceding the opening of the college year.

Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars, in return for which a place of study is provided in Ballou Hall.

Every student who enters the College of Letters is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the

first day of the following college year ; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted.

All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

Students board in commons at \$3.75 per week ; in private families at \$3.50 to \$5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses :—

Tuition	\$100.00	\$100.00
Physical culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	16.00	85.00
Care of rooms	10.00	10.00
Board, \$3.50 to \$5.00 a week (36 weeks)	126.00	180.00
Total	\$263.00	\$386.00

For the expenses of the students of Engineering, see the special pamphlet issued by the Department of Engineering.

OFFICE HOURS.

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.45 to 12.00 o'clock.

SCHOLARSHIPS.

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtain-

ing of a scholarship for one year does not constitute any title to a second nomination.

Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement Day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.B., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Morley Small, of Baldwinville.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSRA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

THE SCHOLARSHIP OF THE CLASS OF 1857.—Founded by the late Heman Allen Dearborn, for the benefit of women students. This scholarship is not available for the present year.

TWO JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Two scholarships of one hundred dollars each for women students, founded by Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the names of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP.—Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by A.A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOHN AND LUCY H. STOWE SCHOLARSHIP.—Founded by Mrs. Lucy H. Stowe, of Lawrence, for the benefit of women students.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by Albert W. Sayles, of Lowell.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years of his course, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

APPOINTMENTS.—The pay of a monitor is *fifteen dollars* a year; that of the bell-ringer and the organist, *one hundred and fifty dollars* each.

PRIZES.

GODDARD PRIZES.—In the second term of the academical year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the Agricola of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the Ars Poetica of Horace.

A prize for the best examination in Plato's symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

HONORS AND DEGREES.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Courses in Liberal Arts who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the Catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering Courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation,—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.
2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.
3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: Electricity.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) will not be counted for Honorable Mention. Subjects marked with a double asterisk (**) will be counted for Honorable Mention only when special requirements, to be defined by the instructor, have been complied with.

THE DEGREE OF BACHELOR OF ARTS will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions stated on pages 54 to 56.

THE DEGREE OF BACHELOR OF PHILOSOPHY will be conferred upon students who shall have complied with the conditions stated on pages 54 to 56, for the attainment of that degree.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the General Course in Science, the Special course in Biology or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 94 to 101.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, in Electrical Engineering, or in Mechanical Engineering will be conferred upon students who shall have completed the required course, as defined on pages 104 to 134.

Students of the courses in Liberal Arts may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electri-

cal Engineering, or Mechanical Engineering, after a graduate course of one year in the Engineering Department.

For the advanced degrees of MASTER OF ARTS, DOCTOR OF PHILOSOPHY, CIVIL ENGINEER, ELECTRICAL ENGINEER, and MECHANICAL ENGINEER, see announcement of Graduate Department, page 135.

THE DIVINITY SCHOOL

Faculty of the Divinity School.

ELMER H. CAPEN, D.D., LL.D., PRESIDENT.

CHARLES H. LEONARD, D.D., DEAN.

Goddard Professor of Homiletics and Pastoral Theology.

WILLIAM G. TOUSEY, A.M., D.D.,

Professor of Ethics and the Philosophy of Theism.

GEORGE T. KNIGHT, D.D., SECRETARY.

Professor of Church History, and in charge of Systematic Theology.

GEORGE M. HARMON, A.M., D.D.,

Professor of Biblical Theology.

DAVID L. MAULSBY, A.M.,

Professor of English Literature and Oratory.

WARREN S. WOODBRIDGE, A.M., B.D.,

Woodbridge Professor of Applied Christianity.

NON-RESIDENT LECTURERS.

HENRY W. RUGG, D.D.,

Lecturer on Christian Missions.

FRANK O. HALL, B.D.,

Lecturer on The Work of the Ministry.

RICHARD EDDY, D.D.,

Lecturer on The History of Universalism.

EDWARD L. HOUGHTON, A.M.,

Lecturer on Pauline Studies.

MINER HALL.

The Divinity School.

The Divinity School is one of the departments of Tufts College, the general advantages of which are enjoyed by all its members in common. The College Library, the Museum of Natural History, the Gymnasium, are accessible to all. Courses of study and lectures in the College of Letters are open to the Divinity Students, subject, however, to the discretion of the Faculty. The graduates of the Divinity School, in common with the graduates of the other departments, are enrolled in the Quinquennial Catalogue of the College, and are eligible to membership in the Alumni Association of Tufts College.

REQUIREMENTS FOR ADMISSION.

Candidates unknown to the Faculty must bring satisfactory testimonials as to character. It is expected that they will present themselves on the day preceding the first day of the academic year.

Bachelors of Arts are admitted to a three years' course, without examination, to be candidates for the degree of Bachelor of Divinity. Candidates for this degree who are not Bachelors of Arts are required to take a four years' course, and to sustain a satisfactory examination on average passages from the Latin of Cæsar, Cicero, and Vergil; and on average passages from the Greek of Xenophon, Homer, and the Gospels. Ability to read simple prose in French or German, and to write in French or German a paragraph upon an assigned subject, is accepted as an alternative for the requirement in Latin. Candidates are also required to pass an examination in Greek, Roman, English, and American History; in Rhetoric; in English Literature and in English Grammar and Composition, in which the requirement is as follows:—

ENGLISH GRAMMAR AND COMPOSITION.—Spelling, punctuation, structure of sentences, correct use of words, clearness of expression.

The examination will consist (1) in criticising specimens of incorrect English ; (2) in writing a short composition on a subject assigned. Subjects for composition will be drawn from the following standard works in English literature. All the books named for the given year are to be read, and from two or three of them subjects will be assigned at the time of examination.

For 1901.—George Eliot's *Silas Marner* ; Pope's *Iliad*, Books I, VI, XXII, and XXIV ; The Sir Roger de Coverley Papers in *The Spectator* ; Goldsmith's *Vicar of Wakefield* ; Scott's *Ivanhoe* ; Shakespeare's *Merchant of Venice* ; Cooper's *Last of the Mohicans* ; Tennyson's *Princess* ; Coleridge's *Rime of the Ancient Mariner* ; Shakespeare's *Macbeth* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Burke's *Speech on Conciliation with America* ; Macaulay's *Essays on Milton and Addison*.

For 1902.—George Eliot's *Silas Marner* ; Pope's *Iliad*, Books I, VI, XXII, and XXIV ; The Sir Roger de Coverley Papers in *The Spectator* ; Goldsmith's *Vicar of Wakefield* ; Scott's *Ivanhoe* ; Shakespeare's *Merchant of Venice* ; Cooper's *Last of the Mohicans* ; Tennyson's *Princess* ; Coleridge's *Rime of the Ancient Mariner* ; Shakespeare's *Macbeth* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Burke's *Speech on Conciliation with America* ; Macaulay's *Essays on Milton and Addison*.

For 1903, 1904, 1905.—Shakespeare's *Merchant of Venice* and *Julius Cæsar* ; The Sir Roger de Coverley Papers in *The Spectator* ; Goldsmith's *Vicar of Wakefield* ; Coleridge's *Ancient Mariner* ; Scott's *Ivanhoe* ; Carlyle's *Essay on Burns* ; Tennyson's *Princess* ; Lowell's *Vision of Sir Launfal* ; George Eliot's *Silas Marner* ; Shakespeare's *Macbeth* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Burke's *Speech on Conciliation with America* ; Macaulay's *Essays on Milton and Addison*.

Applicants from other theological institutions whose course of study is the equivalent of that pursued in this institution will be received *ad eundem*.

Course of Study.

SUB-JUNIOR CLASS.

Logic.—The First Principles of Logic; Concepts and Propositions; Immediate Inference; Deduction; Induction; Analogy; Hypothesis. *Four hours a week, first half-year.*

PROFESSOR TOUSEY.

Psychology.—Elementary; The Relations between Mind and Body; The Principles of Modern Psychology; James's smaller Psychology as a text-book; Lectures; Experiments. *Three hours a week, second half-year.*

DR. CUSHMAN.

English.—One or more courses, to be selected, under direction, from those offered in the College of Letters (see pages 58-61). *Three hours a week.*

New Testament.—History of the times of Jesus. *Two hours a week.*
Greek of the New Testament. *One hour a week.*

PROFESSOR HARMON.

Oratory.—Class Exercises in Vocalization and Gesture. The Principles of Oratory exemplified in practice. *One hour a week.*

PROFESSOR MAULSBY.

A Science or Language Study.—(To be selected under direction of the Faculty.) *Three hours a week.*

JUNIOR CLASS.

Logic.—Fallacies; Analysis of Arguments; Ethics of Belief. *Two hours a week, first half-year.*

PROFESSOR TOUSEY.

Old Testament.—General Introduction. *Three hours a week.*

PROFESSOR WOODBRIDGE.

New Testament.—Criticism of the Synoptic Gospels, Textual and Historical; Hermeneutics; Life and Teachings of Jesus from the Greek of the Synoptic Gospels, with studies from the life of his times. *Four hours a week.*

PROFESSOR HARMON.

Church History.—History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Four hours a week.*

PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

Homiletics.—History of Preaching; The Idea and Structure of the Sermon; Homiletic Analysis. *Three hours a week, second half-year.* PROFESSOR LEONARD.

Oratory.—Practice in the reading of Scripture, Hymns, and in formal and extemporaneous speaking. *One hour a week.* PROFESSOR MAULSBY.

MIDDLE CLASS.

Old Testament.—Special studies in Old Testament Literature. *Three hours a week.* PROFESSOR WOODBRIDGE.

New Testament.—Criticism of Acts and the Epistles; History and Doctrines of the Apostolic Church, from the Greek of Acts and the Epistles; Criticism, Exegesis, and Doctrines of the Johanne Writings. *Four hours a week.* PROFESSOR HARMON.

Ethics.—The Moral Nature; Ethical Theory; Practical Ethics; Ethics and Theism. *Three hours a week.* PROFESSOR TOUSEY.

Systematic Theology.—Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. *Four hours a week, first half-year; three hours a week, second half-year.* PROFESSOR KNIGHT.

Homiletics.—Study of Sermons of Eminent Preachers; Lectures; Sermon Writing and Preaching. *Three hours a week.* PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, second half-year.* PROFESSOR WOODBRIDGE.

SENIOR CLASS.

Comparative Theology.—The Religions of Ancient Egypt and Chaldea; Hinduism; Buddhism; Confucianism; Taouism; Parseeism; Mohammedanism. *Three hours a week, first half-year.* PROFESSOR KNIGHT.

Philosophy of Theism.—The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.* PROFESSOR TOUSEY.

Economics.—Lectures on the History of Finance; Methods and Functions of Banking; Taxation, including Principles of Civil Government. Text-book work, Lectures, and Independent In-

vestigations dealing with the History of Economics, Theories of Production, Consumption and Distribution; Problems of Profits, Wages, and Labor. *Three hours a week, first half-year.*
 PROFESSOR METCALF.

Homiletics.—Homiletic Analysis; Lectures on Preaching; Composition and Delivery of Sermons. *Three hours a week.*
 PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, first half-year.* The Pastor's Personal Qualifications and Duties; Organized Work in the Parish; The Conduct of Public Worship; The Mode of Conducting the Special Services of the Church; Actual Work in Missions and Charities. *Four hours a week, second half-year.*

PROFESSOR WOODBRIDGE AND PROFESSOR LEONARD.

Departments of Instruction.

PSYCHOLOGY.

The course in Psychology is elementary, and includes three hours a week for a half-year. The first topic is the Physiological Structure of the Brain and the Physiology of Special Senses. Then the psychological phenomena are studied. The method of the course is strictly to review, in a scientific way, the fundamental principles of modern psychology. The aim includes not only scientific instruction and practical self-culture, but also has reference to professional uses.

LOGIC.

The Sub-Juniors receive instruction in the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

The Juniors are exercised more especially in the application of logical principles. A review of the fallacious ten-

dencies of the mind is followed by an extended study of Fallacies, as exemplified in the practical reasoning of men. The course concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed, the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

ENGLISH.

The efficiency of the clergyman is so largely conditioned by literary ability that much emphasis is placed upon the study of English. Opportunity is given to the student to elect in the College of Letters, in the direction both of composition and English literature. Well-directed practice in English composition affords direct aid in the formation of literary style, while the influence of the study of the masterpieces of literature, though indirect, is no less powerful in developing a feeling for appropriate expression. Moreover, the great poets and prose writers abound in suggestion for the public speaker, in both their thought and its expression. In consequence, divinity students are expected to take such of the offered subjects as are adapted to their individual needs and available time. Some are advised to continue this work even throughout their whole theological course.

OLD TESTAMENT.

The study of Old Testament has in view a knowledge of the thought and religious life of the Israelites, through the history of their literature and a special study of selected books. For the present, in the absence of a special instructor in this department, work in the Old Testament is confided to Professor Woodbridge. Other teachers in the school, however, will deal with phases of this study, according as the subject is related to their special work.

NEW TESTAMENT.

In the sub-Junior year, the history of the Jewish people, both in Palestine and in other lands, is pursued, to acquaint the class with the preparation for Christianity in the sentiments of the people, in the character of their institutions, and in their social and religious condition.

The historical conditions of affairs in the Græco-Roman world are also studied, for their bearing upon the same question.

In the Junior year the sources of the text of the New Testament are considered, with the principles employed in determining the true text, the aim being to render the student intelligent as to the procedure in textual Criticism and the bearing this procedure has on the work of exegesis. The History of the Canon for the first two centuries, and the historical and literary criticism of the Gospels, are next treated, to secure on the part of the student an understanding of the principal problems involved and the grounds of their discussion, the habit of sober and sound criticism, and a knowledge of the nature and contents of the Gospel writings.

In dealing with the life of Jesus, notes on methods of correct interpretation are given the class, and their application is required in its exegetical work. The significant points and phases in the life and ministry of Jesus are selected and considered, passages from the Greek of the Synoptic Gospels being employed to obtain a knowledge of the mind of Jesus, his relations to the parties and people of his time, the methods he pursued in his ministry, the course of facts in his life, and the doctrines he taught. Incident to this study, the critical points in dispute are considered as they arise. Historical and archæological questions are examined in their natural connections.

In the Middle year, the History and Doctrines of the Apostolic Church are studied, the Book of Acts being used as the basis. This writing is first examined as an historical authority ; passages from it in Greek are chosen, giving

the significant stages in the external growth of the church and in its internal development; and these are studied with the aim to trace the first realization of the life of Jesus in the world. The Epistles of St. Paul are critically examined in the order of their origin in his ministry. Critical and exegetical studies of Hebrews and of the Johannine writings conclude the work.

As a part of this study, the Theology of the New Testament is taken up. The attempt is made to discover the teaching of Jesus contained in the Synoptic Gospels. With this teaching as the basis, the individual interpretations of the several Synoptists, of the author of the Fourth Gospel, of St. Paul in his earlier and later epistles, of the author of Hebrews, and the writers of the Catholic Epistles are compared, each writing being first considered by itself. The aim is to obtain the common elements of teaching, and also what is distinctive in each writer and time.

CHURCH HISTORY.

The purpose of the instruction in Church History is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the External Growth of the Church and Its Relations to the State; the Internal Organization; Intellectual Life and doctrine; Moral Life; the Form and Substance of Worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the History of Doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the Ante-Nicene Fathers, and others; the chief secondary authorities on General Church History, such as the works of Schaff, Fisher, Neander, Alzog; the special historical works of Fisher, Müller, Dorner, Briggs, Eddy, Ballou; and the American Church History series.

In preparation for the regular class-room exercise, the student is provided with an analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

COMPARATIVE THEOLOGY.

The primary aim of this study is a general knowledge and a catholic temper regarding the Non-Christian religions. A secondary utility is found in that a candid study of the excellencies and defects of many religions renders the student more able to reject the false, and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the records of the past, Müller's edition of the Sacred Books of the East, Müller's own writings, the series entitled Non-Christian Religious Systems; and, in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the encyclopædia Britannica.

The religions studied are those of ancient Egypt and Chaldæa ; Hinduism, ancient and modern ; the religions of Gautama Buddha, Confucius, Lao-tse, Zoroaster, and Mohammed.

The chief topics noted are : the Deity ; the Forms and Meaning of Worship ; the Theory of Ethics, and the Sanctions of Moral Life, including the Scheme of Salvation ; the Actual Condition of the People representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigations are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

ETHICS.

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct Moral Theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as Sentimentalism, Hedonism, Utilitarianism, Intuitionism, Naturalism, and Determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

During the second half of the year, the class attends more especially to Practical Ethics, dealing with the leading problems of the Individual and the Social Life, and giving particular attention to such subjects as Rights, Education, Charities, State Aid, Temperance, Socialism. Some attention is also given to Casuistry. The course concludes with a review of what is distinctively known as Christian Ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

PHILOSOPHY OF THEISM.

After some discussion of Agnosticism and other antecedent objections to Theism, the various modes of the theistic argument are reviewed, their grounds scrutinized, and their logical value carefully considered. In discussing the attributes of God, and His relation to the universe, Pantheism and Pessimism receive somewhat special notice. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

SYSTEMATIC THEOLOGY.

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of Biblical Theology, Religious History, Natural Theology, Ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions,—the Doctrine of God, the Doctrine of Man, the Doctrine of Salvation, and the Doctrine of the Future Life. The traditional subdivisions are noted historically, but are accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages:—

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.

2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

3. The organization of the results into a scientific product.

4. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H. Martensen, J. S. Dodge, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

HOMILETICS.

The course in Homiletics covers one-half of the Junior year and all of the Middle and Senior years, and includes the study of the most characteristic and instructive periods in the history of preaching ; dictations and lectures on the idea and structure of the sermon ; analyses of portions of the Old and the New Testament, with a view to the homiletical use of texts ; the study of printed sermons, with special reference to form, expression, and the character and range of illustration ; the composition and delivery of sermons, not less than six during the year, all of which are criticized by the class and by the professor ; lectures during the Senior year on Invention and Arrangement of Material, Modes of Development, Style in Spoken Discourse, Helps

in Sermon Preparation, Illustrations and use of Anecdote, the Homiletic Habit, Modern Schools of Preaching, Philosophy of Preaching, Personality in Preaching, Character and Preaching.

APPLIED CHRISTIANITY.

I. The history of Christianity is traced from its beginnings, with the special aim to discover by what methods the application of Christian principles has been secured, and what results have followed.

II. The second part of this course is devoted to a study of Christian principles in their present-day applications, and of the Christian Church as it exists in modern times. Two principles are assumed as fundamental. (1) The office of the church is primarily that of spiritual culture. (2) The mission of the church is primarily to the individual. With these principles in view, an examination is made of the various forms of Christian activity, with a view to ascertain their value and place in the church. The discussion includes the more personal ministrations of the church to its immediate constituency, and its more extended activities in society. This last involves questions relating to socialism, good citizenship, economic and moral reforms, and the like.

III. The final topic in this department is the pastor's office. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications, spiritual, mental, social, of a good pastor, the methods of forming and strengthening a parish, the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this part of the course is the practical preparation of the pastor for his sacred duties.

The work (II and III) of the Middle and Senior years is supplemented with lectures by clergymen and others, who are actively engaged in missions and charities; and the students are encouraged to visit churches and stations in the neighboring cities, that they may study methods in the field.

ORATORY.

The object of the instruction in the Department of Oratory is to inculcate a natural, impressive, and reverent manner of reading the Bible and the hymn-book, and also to cultivate in preaching a delivery that shall be forcible and sincere. To this end the work of the first year involves consideration of the fundamental principles that underlie all oratory, accompanied by practice to assimilate these principles. In the second year the work becomes specifically adapted to the needs of students of divinity, and includes Scripture and hymn-reading, and practice in both written and unwritten discourse.

PHYSICAL TRAINING.

Regular exercise in the Gymnasium is ordinarily required three hours a week of men students, from November to April, during the two years following entrance. The kind of exercise prescribed for each man depends upon his physical condition, as determined by careful medical examination. Provision is made for continuing physical exercise throughout the whole course, according to individual needs.

General Information.

RELIGIOUS EXERCISES.

Devotional exercises, conducted by the professors and the students, are held daily in the chapel. Members of the upper classes prepare sermons, and preach them in

turn before the class. An active branch of the Young People's Christian Union holds regular meetings for religious conference.

EXAMINATIONS.

Frequent written reviews are held in all departments; and, when any subject is completed, the students are required to pass a written examination thereon.

LIBRARIES AND LECTURES.

Students have free access to the general library of the College and to the valuable library of the Universalist Historical Society. Important public libraries of Boston are open to students for consultation.

Supplementary lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

ELECTIVE STUDIES.

Students are permitted to elect studies in other departments of the College, subject, however, to the discretion of the Faculty. Opportunities for pursuing advanced studies are offered to graduates and to others sufficiently qualified.

GENERAL FACILITIES.

Important facilities for general improvement are offered to students, in the valuable libraries and museums of Boston and vicinity. Elaborate courses of lectures on scientific, social, and literary subjects are presented to the public, from time to time. The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

THE DEGREE OF BACHELOR OF ARTS.

The degree of Bachelor of Arts will be given to holders of the degree of Bachelor of Divinity, on the satisfactory completion of ninety-six term hours of work, under the following conditions:—

1. That the ninety-six term hours shall include all of the forty-eight hours of prescribed work necessary for the degree of Bachelor of Arts, as stated on page 55.

2. If any of these prescribed hours have been taken while the candidate was in the Divinity School, and have been counted for the degree of Bachelor of Divinity, an equal number of free electives shall be substituted for them.

3. Any work satisfactorily done in the College of Letters while the candidate was in the Divinity School, which has not been counted toward the degree of Bachelor of Divinity, may be included in the ninety-six term hours required.

THE DEGREE OF MASTER OF ARTS.

The Degree of Master of Arts is conferred at the same time with the degree of Bachelor of Divinity upon Bachelors of Arts of Tufts College who have pursued with distinction the full course for B.D. This degree is conferred under the same conditions on Bachelors of Arts of other colleges whose courses of study have been equivalent to the course for which the degree of A.B. is given by Tufts College.

This degree may also be received by Bachelors of Arts who do not apply for the degree of Bachelor of Divinity, after taking with credit an approved course of one year or more in this school, under conditions defined in the statement of the Graduate Department.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL.

Miner Theological Hall contains eight large, well-lighted, and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the

Historical and Reference Libraries, and one is appropriately furnished for the Religious Services of the school. A third room in the same hall is furnished as a parlor, and known as the Maria Miner Reception-Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

Rooms are assigned in the order of application, but no room is reserved for any applicant who does not appear within one week of the opening of the college year.

The women students in the Divinity School may find rooms and board in Metcalf Hall on the same terms and subject to the same conditions as apply to the women who enter the College of Letters.

EXPENSES AND PECUNIARY AID.

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it. A remission of one-half of this amount may be made by the Executive Committee of the Trustees to students who cannot be accommodated in Paige Hall, or who live at home. The necessary expenses for board, washing, gas, and gymnasium charges do not exceed two hundred dollars a year. The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School; and the Faculty is authorized to assign special scholarships to those whose circumstances require this extra help. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

BONDS AND DEPOSITS.

Each student who enters the Divinity School is required to deposit with the Treasurer of the College either a bond, with two satisfactory sureties, for the amount of one hundred dollars, or the sum of fifty dollars in money, which sum will bear interest at the rate of four per cent. yearly, and will be returned to the student when he leaves the Divinity School, his term bills first having been paid in full.

LICENSE TO PREACH.

The regular time for applying for licensure is near the close of the first half of the Middle year. Before that time the members of the Divinity school are not allowed to preach.

SCHOLARSHIPS AND SPECIAL FUNDS.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships of fifty dollars each are for the benefit of students in the Divinity School :—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

THE MEDICAL SCHOOL

Faculty of the Medical School.

ELMER H. CAPEN, D.D., LL.D., PRESIDENT.

HAROLD WILLIAMS, A.B., M.D., 528 Beacon St., Boston.
*Dean and Professor of the Principles and Practice
 of Medicine.*

CHARLES P. THAYER, A.M., M.D., 74 Boylston St., Boston.
*SECRETARY and Professor of General, Descriptive
 and Applied Anatomy.*

HENRY W. DUDLEY, M.D., Abington.
*Professor of Pathology, Emeritus, and Lecturer on Legal
 Medicine.*

FRANK G. WHEATLEY, A.M., M.D., North Abington.
Professor of Materia Medica and Therapeutics.

SAMUEL G. WEBBER, A.B., M.D., 419 Boylston St., Boston.
Professor of Neurology.

ERNEST W. CUSHING, A.B., M.D., LL.D., 168 Newbury St., Boston.
Professor of Abdominal Surgery and Gynaecology.

ARTHUR E. AUSTIN, A.B., M. D., Tufts College Medical School.
Professor of Medical Chemistry and Toxicology.

CHARLES A. PITKIN, A.M., Ph.D., South Braintree.
Professor of General Chemistry.

JOHN L. HILDRETH, A.B., M.D., LL.D., 14 Garden St., Cambridge.
Professor of Clinical Medicine, Emeritus.

HENRY B. CHANDLER, M.D., 34½ Beacon St., Boston.
Professor of Ophthalmology.

WALTER CHANNING, M.D., LL.D., Brookline.
Professor of Mental Diseases.

FREDERIC L. JACK, M.D., 215 Beacon St., Boston.
Professor of Otology.

GEORGE H. WASHBURN, A.B., M.D., 311 Marlborough St., Boston.
Professor of Obstetrics.

FREDERIC M. BRIGGS, A.B., M.D., 31 Massachusetts Ave., Boston.
Professor of Clinical Surgery.

TIMOTHY LEARY, M.D., Tufts College Medical School.
Professor of Pathology and Bacteriology.

HORACE D. ARNOLD, A.B., M.D., 188 Warren St., Roxbury.
Professor of Clinical Medicine.

HOWARD S. DEARING, A.M., M.D., 607 Tremont St., Boston.
Assistant Professor of Clinical Medicine.

HERBERT WARREN WHITE, M.D.,
151 Humboldt Ave., Roxbury.
Assistant Professor of Theory and Practice of Medicine.

E. CHANNING STOWELL, A.B., M.D.,
9 Massachusetts Ave., Boston.
Assistant Professor of Children's Diseases.

GEORGE W. KANAN, M.D., Hotel Oxford, Boston.
Assistant Professor of Clinical Gynaecology.

GEORGE VAN NESS DEARBORN, A.M., M.D., Ph.D.,
Tufts College Medical School.
Assistant Professor of Physiology.

JAMES S. HOWE, M.D., 15 Charles St., Boston.
Assistant Professor of Dermatology.

OTHER INSTRUCTORS.

HENRY J. BARNES, M. D., 429 Beacon St. Boston.
Lecturer on Hygiene.

WALTER J. OTIS, M.D., 267 Beacon St., Boston.
Lecturer on Rectal Diseases.

WILLIAM S. BOARDMAN, A.B., M.D., 57 Hancock St., Boston.
Lecturer on Laryngology.

GEORGE A. BATES, D.D.S., Auburndale.
Lecturer on Histology.

GEORGE A. WEBSTER, M.D., 28 Greenwich Park, Boston.
Instructor in Otology.

EDWARD E. THORPE, M.D., 711 Boylston, St., Boston.
Instructor in Medical Chemistry.

EDWARD L. TWOMBLY, A.B., M.D.,
406 Massachusetts Ave., Boston.
Instructor in Clinical Medicine.

WARREN F. GAY, A.B., M.D., 416 Marlborough St., Boston.
Instructor in Surgery and Assistant in Surgical Pathology.

JOSEPH C. STEDMAN, M.D.,
Warren Chambers, Boylston St., Boston
Instructor in Rectal Diseases.

GARDNER W. ALLEN, A.B., M.D.,
Warren Chambers, Boylston St., Boston.
Instructor in Genito-Urinary Surgery.

CHARLES F. PAINTER, A.B., M.D., 416 Marlborough St., Boston.
Instructor in Orthopedic Surgery.

EUGENE T. McNAMARA, M.D., 773 Tremont St., Boston.
Instructor in Electro-Therapeutics.

THEODORE C. ERB, M.D., 551 Commonwealth Ave., Boston.
Instructor in Obstetrics.

CHARLES D. KNOWLTON, M.D., 574 Warren St., Roxbury.
Instructor in Pathology and Bacteriology.

ELIZABETH A. RILEY, M.D., Charity Club Hospital.
Instructor in Gynaecology.

WILLIAM J. DALEY, A.B., M.D., 64 Commonwealth Ave., Boston.
Instructor in Ophthalmology.

EUGENE THAYER, A.B., M.D., 2683 Washington St., Roxbury.
Demonstrator of Anatomy.

JOHN I. FRENCH, M.D., Winchester.
Instructor in Materia Medica and Therapeutics.

RICHARD F. O'NEIL, A.B., M.D., 416 Marlborough St., Boston.
Demonstrator of Bandaging and Apparatus.

HORACE S. MORAN, M.D., 86 Warren St., Roxbury.
Instructor in Obstetrics.

ROBERT W. HASTINGS, M.D., Brookline.
Instructor in Theory and Practice of Medicine and Assistant in Pediatrics.

RICHARD F. CHASE, M.D., 426 Massachusetts Ave., Boston.
Assistant in Clinical Medicine.

JOHN S. MAY, M.D., 219 Warren St., Roxbury.
Assistant in Obstetrics.

A. OLGA CUSHING, M.D., Cushing Hospital, Roxbury.
Assistant in Pathology and Bacteriology.

FREDERICK F. STRONG, M.D., 178 Huntington Ave., Boston.
Assistant in Pathology and Bacteriology.

CHARLES B. DARLING, M.D., 27 Rockville Park., Roxbury.
Assistant in Clinical Gynaecology.

W. HERBERT GRANT, M.D., 419 Boylston St., Boston.
Assistant in Clinical Gynaecology.

EDWARD A. PEASE, M.D., 15 Charles St., Boston.
Assistant in Clinical Gynaecology.

D. H. CRAIG, M.D., 86 Charles St., Boston.
Assistant in Clinical Gynaecology.

FRANCIS D. DONOGHUE, M.D., 146 Massachusetts Ave., Boston.
Assistant in Operative Surgery.

Laboratory Assistants.

ALONZO K. PAINE, Hyannisport.
Anatomy.

GEORGE W. GILLETTE, Roxbury.
 JOHN PARR, Lawrence.
 THOMAS W. MURPHY, Lawrence.
 LEWIS MODERNO, Somerville.
General Chemistry.

JOHN H. CHEEVER, Portsmouth, N. H.
 ABRAHAM J. HURWITZ, Ph. G., Boston.
Medical Chemistry and Toxicology.

JOHN V. GALLAGHER, A.B., Milford.
 MARY E. GILL, Brookline.
Pathology and Toxicology.

Bursar.

HERBERT T. BROWN, Tufts College.

STANDING COMMITTEES OF THE MEDICAL SCHOOL.

EXECUTIVE.—The President, the Dean, the Secretary, and Drs. Wheatley and Leary.

CATALOGUE.—Drs. Thayer, Williams, and Briggs.

NOMINATIONS.—The Dean, Drs. Channing and Wheatley.

LIBRARY.—Drs. Jack, Cushing, and Washburn.

COURSE OF INSTRUCTION.—The Dean, the Secretary, Drs. Leary, Austin and Arnold.

ADMISSION.—The Dean, the Secretary, Drs. Leary, and Austin.

DISPENSARY.—The Dean, Drs. Briggs, Thayer, and Arnold.

College Dispensary Staff.

Physicians.

HOWARD S. DEARING, M.D., H. WARREN WHITE, M.D.

Surgeons.

FREDERIC M. BRIGGS, M.D., WARREN F. GAY, M.D.

Assistant Physicians.

J. I. FRENCH, M.D., ANNIE S. K. PATCH, M.D.,
E. T. McNAMARA, M.D., R. F. CHASE, M.D.

Assistant Surgeons.

F. W. PEARL, M.D., R. F. O'NEIL, M.D.

Gynaecologist.

ERNEST W. CUSHING, M.D.

Assistant Gynaecologist.

ELIZABETH A. RILEY, M.D.

The Medical School.

The Tufts College Medical School was established in Boston in 1893. It is co-educational, women being admitted on the same terms as men. The school building is a handsome stone structure, situated upon the corners of Rutland Street, Shawmut Avenue, and Newland Street, and has cost about \$75,000.

Owing to the unforeseen growth of the school, however, it has proved inadequate, and a new building, situated on Huntington Avenue opposite the new Art Museum, is now in process of construction. A reference to the plans, published in this catalogue, will demonstrate how admirably it is designed to meet the requirements of medical education at the present time.

CLINICAL ADVANTAGES.

Boston, as the largest city of New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Free Hospital for Women, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics will be held at the Boston City Hospital, the Massachusetts Eye and Ear Infirmary, and at the Boston Dispensary, which last, as the largest medical charity in Boston, affords an unsurpassed field for familiarizing the student with the various forms of disease. The school dispensary offers unusual clinical advantages. Members of the medical and surgical staff are also connected with various other institutions, among which may be mentioned the St. Elizabeth Hospital, the Carney Hospital, the Cambridge Hospital, the Woman's Charity Club Hospital, and the

Tremont Dispensary. So far as possible the material thus afforded will be utilized for the benefit of the students.

Departments of Instruction.

ANATOMY.

The course in Anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their importance in the operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the Demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

HISTOLOGY.

The course in Histology covers the second half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, which are the legitimate objects of his study. He learns to use the microscope, and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of Pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on the payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises, conferences, and recitations will form a part of the course.

PHYSIOLOGY.

The course in Physiology is given throughout the latter half of the first year. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of Foster's Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially psychology. In the laboratory, the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports, and freely discussed by the class.

By thus concentrating attention upon Physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of at least the normal human organism will be acquired.

GENERAL CHEMISTRY.

This course consists of Descriptive Chemistry and Qualitative Analysis, with so much of Theoretical Chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds, also, is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. Much attention is given to Qualitative Analysis for the sake of the valuable training which it imparts and the knowledge of Chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in Chemistry, as is necessary to the intelligent physician. At the same time, any who wish to pursue the study further than is required of every graduate may do so, by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3 in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry.

MEDICAL CHEMISTRY.

Medical Chemistry resolves itself naturally into Physiological Chemistry, Clinical Chemistry, and Toxicology. Each is given its due amount of attention, in lectures, demonstrations, and practical work in the laboratory. The student first acquires a familiarity with proteins, carbohydrates, and fats,—the bases of all animal tissue.

Then he obtains a practical knowledge of the digestions, salivary, stomachic, and pancreatic, associated with the clinical examination of stomach contents. This is followed by the investigation of blood, urine, and bile, both in their physiological and pathological aspects. Toxicology then demands the attention of the student, who examines metallic poisons, both in their simple state and when mixed with organic matter, together with as much attention to ptomaines as is required by their very close association with alkaloids in medico-legal investigations.

MATERIA MEDICA AND THERAPEUTICS.

Instruction in the department of Materia Medica and Therapeutics consists of lectures and recitations three hours a week during the year. Especial attention is given to the consideration of the physiological action of drugs in its relation to their therapeutical application, to the relation always existing between rational therapeutics and physiological and pathological laboratory work, and to a thorough description of the essential properties of remedies employed. Samples of drugs will be shown.

Demonstrations by the aid of assistants will be made of the various laboratory processes, and the methods of application of the various remedies used in practice will be taught. Prescription writing and the metric system will receive careful attention. Such of the recent additions to Materia Medica as are deemed worthy will be properly considered.

PATHOLOGY.

Instruction in Pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes.

In addition to lectures there will be recitations upon a syllabus, embracing the subject of General Pathology,

and a series of talks in connection with the demonstrations and laboratory exercises. Oral recitations will be held, the class being divided into sections for this purpose. Written recitations will be held, without notice, at irregular intervals during the term. The standard attained by the student in these exercises will influence his mark in the final examination upon the subject. Demonstration of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts General Hospital, and other institutions, will take place at least once a week. This work will include the demonstration and recitation by students on pathological specimens. For the work in pathological histology, two hours a week are required. Students will mount and make drawings of specimens comprehending all of the subjects of general pathology. Each student will be required to pass a satisfactory examination on the laboratory work.

An opportunity will be given to students in high standing to obtain a training in practical work in Pathology and Bacteriology in the Pathological Department of the Boston Dispensary.

Final examination will be held at the end of the year, three hours of written and two hours of practical work, which may include a report on gross specimens.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY.

Bacteriology is taught as a companion study with Pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxins, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially

emphasized. Particular attention is also paid to the application of all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. Two hours a week of laboratory work are required, and facilities are afforded students for additional individual work. In connection with the demonstrations of gross pathological specimens, a study of the bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

THEORY AND PRACTICE OF MEDICINE.

The course prescribed in the department of General Medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the Theory and Practice of Medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures a quiz-course, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical courses of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY AND CLINICAL SURGERY.

Instruction in this department consists of two lectures weekly, on the general principles and practice of surgery, one clinical lecture a week, one recitation every week from the text-book, a bi-weekly quiz on the preceding lectures, and three one-hour examinations (in addition to the final examination), at intervals, during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year, are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lecture at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

OBSTETRICS.

Instruction in the department of Obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

GYNAECOLOGY AND ABDOMINAL SURGERY.

Instruction is given both by lectures and clinical teaching. Lectures are given to the Junior class once a week on Gynaecology, and once a week on Abdominal Surgery, including hernia, appendicitis, and the major operations on the female generative organs. There will also be several demonstrations of the various operations, on the cadaver.

Once each week a quiz is held on the lectures. Arrangements have been made by which the students of the Senior class who elect Clinical Gynaecology may witness operations in the hospital service of the professor in charge.

DISEASES OF CHILDREN.

Instruction in this department consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are very great, and examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and childhood, is given, and also special clinical instruction in the auscultation and percussion of children, and the contagious diseases. The members of the class are received in small sections. Examinations are held in this department once every two months.

HYGIENE.

The course in Hygiene consists of a series of lectures and recitations, upon personal hygiene, communicable and preventable diseases, occupations, trade nuisances, water-supply, sewerage, houses, school hygiene, hospitals, quarantine, municipal sanitation, climate, vital statistics, and so on. It is proposed in the near future to establish a course for graduates in the subject of General Hygiene, for which a special degree will be conferred.

CLINICAL MEDICINE.

The aim of this course is to give the student a practical acquaintance with disease.

Normal Auscultation and Percussion will be taught in the latter part of the second year.

During the third year the work in Auscultation and Percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture once a week in Medical Diagnosis.

During the fourth year there will be three regular exercises weekly, besides numerous clinics. One hour a week will be given to didactic lectures. This will be followed by lectures on Military Medicine by Assistant Professor Dearing, on Commercial Medicine by Dr. Stowell, and on diseases of the Blood by Professor Arnold. Practical work in the examination of blood will be given in the laboratory by Dr. Strong, under the supervision of Professor Leary. The second exercise will be a clinical conference, one hour a week. At this conference reports of cases written by the fourth-year students will be read, and will be discussed and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students will also be admitted to the clinical conferences. The third exercise will be a clinical lecture by Professor Arnold in the Amphitheatre of the Boston City Hospital, once a week throughout the school year. Patients from the Hospital wards will be shown at this lecture, and the diagnosis and treatment will be discussed. Third-year students will also be admitted to this lecture.

In addition, clinical exercises will be held at the following institutions: at the Boston Dispensary, by Professor Williams; at the Cambridge Hospital, by Professor Hildreth; at the Boston City Hospital, by Professor Arnold; at St. Elizabeth's Hospital, by Assistant Professor

Dearing and Dr. White ; at the Boston Dispensary, by Dr. Chase ; and at the School Dispensary, by Assistant Professor Dearing, and Drs. Chase and Patch. Students will also be taken on visits in the " Districts " of the Boston Dispensary. Here they will see cases of sickness in their homes, and will be enabled to follow the changes in the condition of the patients. They will be required to make a special study of certain of these cases, and to make a written report. These reports will furnish the material for clinical conferences.

There will be a three-hour written examination at the end of the fourth year. In addition to this, the mark for the course will be based on a written report of two cases, the satisfactory examination of three cases at the clinics, and upon the work in general in this department.

CLINICAL AND OPERATIVE SURGERY.

This course consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continuing and completing the surgical instruction of the Junior year. Students of the Senior class attend, in sections, the surgical clinics at the Boston Dispensary, at the Carney Hospital, and at St. Elizabeth's Hospital, from October 1 to May 15. At these exercises students make personal examination, and report to the instructor on successive cases, as they enter the consulting room, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of this class also have numerous opportunities of administering ether, of assisting at operations, and, with certain necessary limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, the treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and, after January 1, one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The course in Operative Surgery consists of demonstrations on the cadaver by the surgical staff of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily, until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

LARYNGOLOGY.

Instruction in Laryngology and Rhinoscopy will be given at the Boston Dispensary, beginning January 1, 1901, and continuing until April 1. The students of the Senior class will be divided into sections, and will visit the clinic of the instructor on Tuesdays, Wednesdays, Thursdays, and Fridays of each week, where an opportunity is afforded them for studying the diagnosis and treatment of diseases of the throat and nose, by actual examination of the patients. The object of the course is to give instruction in cases of this class which are liable to come under the observation of the general practitioner, such as adenoid growth, diphtheritic false membranes, syphilis, and tuberculosis. The subject is also illustrated by lectures and diagrams.

OPHTHALMOLOGY.

This course will be of the most practical character possible, being designed to give the general practitioner such

knowledge of the subject as is most essential to his practice. The lectures will be given at the Massachusetts Charitable Eye and Ear Infirmary, once a week through the school year, and will be fully illustrated by clinical cases.

CLINICAL GYNAECOLOGY.

The very large material of the Free Hospital for Women is utilized for the instruction of students of the Senior Class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department, provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. The operations at this Hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half year, where papers are read by the students and discussed.

NEUROLOGY.

There will be lectures upon diseases of the nervous system, especially such as are most commonly met in practice. Cases will be examined before the class, and there will be opportunity for clinical observations at the Boston Dispensary. The anatomy and physiology of the nervous system will be considered, so far as is necessary to understand the relations of symptoms to organic changes in the nerve centres.

MENTAL DISEASES.

Instruction in Mental Diseases will consist of a course of clinical lectures so arranged as to cover the most important part of the subject. Last year, through the courtesy of the trustees and superintendent of the Boston Insane Hospital, many of the lectures were given in that institution, enabling the students to see the various forms of insanity at close range. A valuable clinic was held at the

Massachusetts School for Feeble-Minded, where nearly all kinds of imbecility were seen, and described by the superintendent. Correct methods of hospital management were also illustrated by what was being done at these institutions, as well as at the McLean Hospital.

The course will begin at the Boston Dispensary, and it is the intention to continue it, so far as possible, according to the methods of last year.

LEGAL MEDICINE.

The course in Legal Medicine consists of one lecture each week for twelve weeks, and will include all of the subjects which are usually included under the head of medical jurisprudence, together with a thorough course in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights, both as a medical expert and as an ordinary witness, will be explained.

ORTHOPEDIC SURGERY.

This course consists of one lecture a week at the school for the first half-year, and two exercises a week during the second half year, at the Carney Hospital, the class being divided into sections. The work of the second half-year consists of practical exercises in diagnosis and treatment in the Out-Patient Department, and of ward visits, with opportunity to see the operative orthopedic work.

MERCANTILE AND MILITARY MEDICINE.

This course is intended to acquaint the student with the duties peculiar to the army and navy surgeon and the life insurance examiner. Instruction is given in this course in the methods of physical examination, the preparation of certificates, and other allied subjects.

OTOLOGY.

The instruction in Otolology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary. An elective course consists of clinical work at the same institution.

ELECTRO-THERAPEUTICS.

The course in Electro-Therapeutics will consist of twelve lectures, with quizzes. The lectures include the exhibition of apparatus and explanation of the various methods of the application of electricity in disease.

DERMATOLOGY.

This course is a clinical one, in which cases are shown by the instructor in the departments for diseases of the skin in the Boston City Hospital.

GENITO-URINARY DISEASES.

The various diseases of the Genito-Urinary system will be considered and illustrated by cases, as far as practicable.

DISEASES OF THE RECTUM.

Instruction in this department will be given by Drs. Otis and Stedman, at the Boston Dispensary.

TEXT-BOOKS.

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gerrish, Gray, Quain, Morris, Weisse, Holden, Haynes's Dissector.

Physiology.—Foster, Verroin, American Text-Book, Landois and Sterling, Porter, Chapman, Schäfer.

General Chemistry.—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Schäfer.

Medical Chemistry.—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Clinical Diagnosis, Kobert's Practical Toxicology.

Collateral Reading.—Hammarsten's Physiological Chemistry, Vaughan and Novy's Ptomaines and Leucomaines, von Noorden's Pathologie des Stoffwechsels, Lewin's Toxicologie, Otto's Ausmittelung der Gifte.

Materia Medica and Therapeutics.—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.

Bacteriology.—Syllabus, Muir and Richie, Abbott, McFarland, Park, Levy and Klemperer, Sternberg.

Obstetrics.—Lusk, Reynolds, Dorland, American Text-Book.

Gynaecology.—Greig, Smith, Byford, Dudley, Kelly.

Clinical Gynaecology.—Kelly, Dudley, Greig, Smith.

Surgery.—International Text-Book, Wharton and Curtis, Roberts, Roswell Park, American Text-Book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures.

Clinical and Operative Surgery.—International Text-Book, Roswell Park, American Text-Book, Wharton and Curtis, Roberts, Jacobson's Surgical Operations, Zuckerkandyl's Operative Surgery, Treve's Manual of Operative Surgery.

Practice of Medicine.—Osler, Pepper, Ander's Practice of Medicine.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, DaCosta's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Gower, Dana, Gray.

Mental Diseases.—Chapin, Clouston, Peterson, Lewis, Dictionary of Psychological Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Bosworth, Hall, Coakley, and Bishop on Diseases of the Nose and Throat.

Diseases of the Rectum.—Kelsey's Surgery of the Rectum and Pelvis.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—De Schweinitz, Nettleship, Noyes.

Medical Dictionary.—Gould, Dunglison.

OUTLINE OF THE COURSE.

Freshman Year.

Descriptive Anatomy. Lectures, dissections, demonstrations, and recitations.

Physiology. Lectures, demonstrations, and experimental work in the laboratory.

Histology. Lectures and required laboratory work.

General Chemistry. Lectures and required laboratory work.

Final examinations upon these subjects at the close of the first year.

Second Year.

Pathology. Lectures, demonstrations, and required laboratory work.

Bacteriology. Lectures and required laboratory work.

Materia Medica and Therapeutics. Lectures and recitations.

Medical Chemistry and Toxicology. Lectures and required laboratory work.

Final examinations upon these subjects at the close of the second year.

Bandaging and Apparatus.

Normal Auscultation and Percussion.

Third Year.

Theory and Practice of Medicine. Lectures and recitations.

Surgery. Lectures and recitations.

Obstetrics, including attendance upon two cases of labor. Lectures and recitations.

Abdominal Surgery and Gynaecology. Lectures and recitations.

Pediatrics.

Hygiene.

Auscultation and Percussion.

Final examinations upon these subjects at the close of the third year. Third-year students who have creditably passed all of their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year.

Clinical Medicine, Clinical Surgery, Clinical Gynaecology, Ophthalmology, Otology, Neurology, Dermatology, Laryngology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine, Clinical Surgery, and two of the following subjects, which shall be elected by the student; and a one-hour examination on each of the others :—

Ophthalmology, Otology, Neurology, Dermatology, Laryngology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

EXAMINATIONS.

There are two examinations held each year in the college building. They are in writing, and are held at the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of medicine.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in their examination upon a subject will not be admitted to a third examination without the payment of an examination fee of ten dollars.

Students are eligible for their examinations as follows : those of the Freshman year at the close of the first year's course ; those of the second year at the close of the second year's course, provided they have passed a majority of the

Freshman examinations; those of the third year at the close of the third year's course, provided they have passed all of the Freshman and a majority of the second-year examinations; those of the Senior year at the close of the fourth year's course, provided they have passed all of the Freshman and second-year examinations and a majority of those of the third year.

Requirements.

ADMISSION.

Every applicant for admission must furnish a certificate of good moral character. Forms for this certificate are furnished by the Secretary.

Admission to the Freshman Class.

Students are admitted to the Freshman class without examination upon presentation of the official certificate of reputable literary and scientific colleges, academies, high schools, and normal schools, or upon the medical student's certificate issued by any State examining-board and covering the work required in the following entrance examination. All other students must pass a written examination as follows :—

(a) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

(b) Arithmetic. Such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, ratio, and proportion.

(c) Algebra. Such questions as will bring out the student's knowledge of the fundamental operations, factoring, and quadratic equations.

(*d*) Physics. Such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin. An examination upon such elementary work as is usually included in one year of study; as, for example, the first fifteen chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary. Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

The entrance examinations for 1901-1902 will be held at the Medical School Building, on Tuesday, Oct. 1, 1901, at 10 A. M. Students holding certificates or diplomas are requested to present the same at this time.

Admission to the Second-Year Class.

Graduates of Tufts College who have taken the Medical Preparatory Course, which includes one year of anatomy and physiology at the Medical School, and graduates of other colleges or scientific schools in which an equivalent course is given, may complete the work required for the degree of Doctor of Medicine in three years, provided such equivalent course has been in part a year devoted to medical study.

Graduates of literary or scientific colleges who have not taken the Medical Preparatory course may, under certain circumstances, be admitted to the second-year class, but will have to pass the examinations of the first year before they can become candidates for the degree.

Graduates and students of homœopathic or eclectic schools of medicine, and graduates of reputable colleges of dentistry, pharmacy, and veterinary medicine are admitted to the second year, provided they pass the examination of the first year and have met the requirements of the Association of American Medical Colleges.

Students of this school who have passed a majority of the Freshman examinations and all entrance conditions are admitted to the second-year class.

Admission to the Third-Year Class.

Students who have passed all the Freshman examinations and a majority of the second-year examinations will be admitted to the third-year class.

Admission to the Senior Class.

Students who have passed all the examinations of the Freshman and the second year, and a majority of the subjects of the third year, and graduates of other regular medical schools, will be admitted to the Senior class.

FOR THE DEGREE OF M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements : —

1. They must furnish certificates that they are twenty-one years of age and of good moral character.

2. They must have attended four full courses of medical lectures at some accredited medical college, except as above noted, the last of which shall have been at this school, and no two courses in the same twelve months.

3. They must have passed all the required examinations.

4. They must have attended two cases of obstetrics.

5. They must have satisfactorily dissected one-half of the body, under the direction of a Demonstrator of Anatomy.

6. They must have paid all fees before the final examinations.

The final marks in all subjects are derived from work in the recitations, laboratory, dissecting-room, and in written examinations.

The Faculty reserve the right to change these requirements from time to time, without further notice.

EXPENSES.**First Year.**

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost.

Second Year.

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost.

Third Year.

Matriculation	\$ 5.00
Tuition	120.00

Fourth Year.

Matriculation	\$ 5.00
Tuition	90.00
Graduation fee	30.00
Postgraduate fee for graduates of other schools .	120.00
Single course	30.00
Postgraduate fee for graduates of this school .	60.00
Single course	20.00

All fees are due and should be paid at the commencement of the session. If the circumstances of the student require it, payment may be made as follows: the matriculation fee (\$5.00) and one-half of the tuition fee (\$60.00) may be paid before the first of November of each year; the rest of the tuition fee, together with five dollars (\$65.00), on or before the first of February.

On and after November first, 1900, each student will be required to show his ticket before he will be admitted to the lectures, and no student will be allowed to take any final examination without evidence that his fees are paid.

The graduation fee is payable on or before the first day of May, and no student will receive a diploma from the College until the Bursar certifies that all fees or charges of any kind are settled.

The Bursar of the College will be at the Medical School for the purpose of collecting fees, a notice of the days and hours having been previously posted on the bulletin-board.

There are no scholarships connected with the school.

General Information.

LIBRARIES.

The students have free access to the library of the School, to the Library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library, which last contains a collection of over 15,000 books upon medical subjects.

SESSIONS OF THE SCHOOL.

The annual course of lectures begins on the first Wednesday in October of each year, and continues until the last Wednesday in May.

The next annual course of lectures will commence Wednesday, October 2, 1901.

VACATIONS.

There are no exercises at the School for three days at Thanksgiving, and during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriot's Day, and Memorial Day.

STANDING AND CERTIFICATES.

Graduates of other regular medical schools in good standing may receive the degree of this school after attend-

ing one course of lectures and passing the examinations of the Senior year. It is understood that attendance upon a course of lectures requires actual presence at a majority of the exercises of the session.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work done during his period of connection with the school. The use of tobacco in the lecture and recitation rooms will not be permitted.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 per week. Near the school building are several excellent boarding-places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

Requests for the Annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, M.D., Secretary, Tufts College Medical School, Boston, Mass.

THE DENTAL SCHOOL
(FORMERLY THE BOSTON DENTAL COLLEGE)

Faculty of the Dental School.

ELMER H. CAPEN, D.D., LL.D., PRESIDENT.

HAROLD WILLIAMS, A.B., M.D., 528 Beacon Street.
DEAN, and *Professor of the Principles and Practice of Medicine.*

CHARLES P. THAYER, A.M., M.D., 74 Boylston St., Boston.
SECRETARY, and *Professor of Anatomy.*

EDWARD W. BRANIGAN, D.D.S., 2 Commonwealth Ave., Boston.
Professor of Clinical Dentistry.

FRANK G. WHEATLEY, A.M., M.D., North Abington.
Professor of Materia Medica and Therapeutics.

CHARLES A. PITKIN, A.M., PH.D., South Braintree.
Professor of Chemistry.

GEORGE A. BATES, D.D.S., Auburndale.
Professor of Dental Histology.

JOHN C. MUNRO, A.B., M.D., 173 Beacon St., Boston.
Professor of Surgery.

FREDERICK M. HEMENWAY, D.D.S., Hotel Pelham, Boston.
Professor of Mechanical Dentistry.

TIMOTHY LEARY, M.D., Tufts College Medical School.
Professor of Pathology and Bacteriology.

JOSEPH KING KNIGHT, D.D.S., Hyde Park.
Professor of Prosthodontia.

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.,
Tufts College Medical School.
Assistant Professor of Physiology.

OTHER INSTRUCTORS.

WALTER I. BRIGHAM, D.D.S., South Framingham.
Lecturer on Operative Dentistry.

HENRY J. BARNES, M.D., 429 Beacon St., Boston.
Lecturer on Hygiene.

BYRON H. STROUT, D.D.S., Taunton.
*Lecturer on Operative Technics and Instructor in
 Anaesthesia.*

GEORGE C. AINSWORTH, D.D.S., 220 Clarendon St., Boston.
Instructor in Orthodontia.

CHARLES D. KNOWLTON, M.D., 574 Warren St., Roxbury.
Instructor in Pathology and Bacteriology.

WILLIAM P. HOUSTON, D.D.S., 419 Boylston St., Boston.
 JOHN W. FOREBS, D.D.S., 419 Boylston St., Boston.
 EDGAR O. KINSMAN, D.D.S., 15 Brattle Sq., Cambridge.
 KNUT J. LUTROPP, D.D.S., 282 Columbus Ave., Boston.
 HENRY H. PIPER, D.D.S., Winter Hill, Somerville.
 WILLIAM RICE, D.D.S., 153 Newbury St., Boston.
 BURLEIGH C. GILBERT, D.D.S., Stoneham.
 ERVIN A. JOHNSON, D.D.S., 419 Boylston St., Boston.
Instructors in Clinical Dentistry.

FRED. C. MERRILL, D.D.S., Wollaston.
 EDWIN A. QUINN, D.D.S., 156 Lamartine St., Jamaica Plain.
 WALTER F. WINCHESTER, D.D.S., 372 Boylston St., Boston.
Instructors in Mechanical Dentistry.

EUGENE THAYER, A.M., M.D., 2683 Washington St., Roxbury.
Demonstrator of Anatomy.

JOHN I. FRENCH, M.D., Winchester.
Instructor in Materia Medica and Therapeutics.

FREDERICK F. STRONG, M.D.,
 Hotel Ilkley, Huntington Ave., Boston.
Assistant in Pathology and Bacteriology.

A. OLGA CUSHING, M.D., Cushing Hospital, Roxbury.
Assistant in Pathology and Bacteriology.

HERBERT T. BROWN, Tufts College.
Bursar.

Laboratory Assistants.

ALONZO K. PAINE, Hyannisport.
Anatomy.

GEORGE W. GILLETTE, Roxbury.
 JOHN PARR, Lawrence.
 THOMAS W. MURPHY, Lawrence.
 LEWIS MODERNO, Somerville.
General Chemistry.

JOHN V. GALLAGHER, A.B.,
MARY E. GILL,
Pathology and Bacteriology.

Milford.
Brookline.

CARLENA J. WALKER,
Clerk in Infirmary.

SARAH E. MILLER,
Clerk in Mechanical Department.

FRANCES WILDER,
Matron in Operating-Room.

The Dental School.

The Tufts College Dental School, formerly The Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former Board of Trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of nine months each. The studies of the first year, except for practical work in the Infirmary, are carried on in connection with the Medical School.

Instruction is given by means of lectures, demonstrations, laboratory work, and recitations in Anatomy, Physiology, Histology, Chemistry, Materia Medica, Pathology, Therapeutics, Bacteriology, Principles of Surgery, Oral Surgery, and in Operative, Clinical, and Mechanical Dentistry, and Dental Technics.

The Infirmary, under the individual direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily for nine months of the year. In the abundance and variety of its clinical material, it furnishes ample opportunity for the personal study of Oral Surgery as well as of Dentistry in all its branches.

The Laboratory of the Mechanical Department is provided with abundant facilities for every variety of dental work. Each student is required before graduation to pre-

sent satisfactory specimens of the different forms of mechanical work made at the School, under the supervision of the Professor of Mechanical Dentistry.

The aim of this institution has been from the beginning to give its students such a course of instruction as shall enable them to graduate as well-trained practical dentists. It is a fact which needs no emphasis that no amount of didactic instruction or clinical teaching will take the place of personal practice under competent supervision. Attention, therefore, is called to the fact that the matriculate, from the moment he enters the school, is under the supervision of a professor and his demonstrators, who are in daily attendance in the Infirmary. The intimate daily relationship thus established between professor and pupil continues throughout the course, and produces its legitimate result. But while the practical side of the training is thus emphasized, an effort is made to educate the student in the fundamental branches of medical and dental science, and to awaken in him a taste for study and research, as well as for the cultivation of those higher branches which render dentistry a profession instead of an art.

The Library of the School contains many medical and dental books and periodicals, and is being constantly augmented, the aim being to add the new and important books in the various departments, as they are issued. The Library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all connected with the school are urged to avail themselves of the facilities thus offered. The Boston City

Hospital is but ten minutes' walk from the School, while the Massachusetts General Hospital can be reached by the Belt Line cars.

Owing to the growth of the School under its present management, and its crowded condition, a new building is being constructed, which will be ready for occupancy at the commencement of the session of 1901-1902. A reference to the plans, to be found in another part of the catalogue, will show how carefully the Trustees of the College have anticipated every convenience for the needs of a thorough scientific and practical dental education.

INFIRMARY AND LABORATORY.

In the Clinical and Mechanical Departments instruction is given daily, from 9.30 A.M. to 1 P.M.

Materials used in the Clinical Department are furnished by the College.

HOSPITALS.

Students have admission to the Massachusetts General, the City, and the United States Marine Hospital, and to the Boston Dispensary, where opportunities are offered for observing surgical operations.

THE BUILDINGS.

The present building is situated at the Junction of Tremont, Clarendon, and Montgomery Streets, with a main entrance on Tremont Street. It is exceptionally well located, being easy of access from all parts of the city by the various lines of street-cars. Tremont-Street cars pass the door, while the Washington Street, Shawmut Avenue, Dartmouth Street, Dover Street, and Cambridge lines all pass within two blocks. The Medical School building is situated on the corner of Rutland Street, Shawmut Avenue, and Newland Street. It is within ten minutes' walk of the Dental School.

In close proximity to the College building are the Boston Public Library, Young Men's Christian Association, Rooms of the Boston Society of Natural History, the Art Museum, the Boston City Hospital, and other places of interest and instruction to students.

FIRST FLOOR—INFIRMARY. The first floor is devoted to the Clinical Department. The Infirmary is a very large room, and is especially well situated for operative work, full light being received on three sides,—north, east, and south. The operating-chairs, being arranged on these three sides, are well lighted. A private operating-room of the Professor of Clinical Dentistry, adjoining, is utilized for special operations, consultations, anaesthesia, and other similar purposes. A supply-room, with an assistant in constant attendance, is conveniently located. The main room is provided with seats for the accommodation of the patients who daily visit the Infirmary for treatment.

SECOND FLOOR—MECHANICAL LABORATORY. On the second floor is the Laboratory of the Mechanical Department. It is provided with work-benches, drawers, and lockers for the accommodation of two hundred students. The Laboratory contains vulcanizers, furnaces for continuous gum work, mounted blow-pipes, lathes, apparatus for making alloys and solder, for refining gold, and, in fact, all the modern appliances for the practice of mechanical dentistry.

THIRD FLOOR—LECTURE ROOM. The third floor is occupied by the library, and by lecture and extracting rooms. The lecture-rooms accommodate classes of from seventy-five to one-hundred-and-fifty students.

The Infirmary opens on the Monday previous to the first Wednesday in October, and closes on the second Wednesday in June.

The lectures commence the first Wednesday in October, and continue until the close of the session.

The school is a member of the National Association of Dental Faculties, and complies with its rules and regulations, as well as with those of the National Association of Dental Examiners.

Requirements.

FOR ADMISSION.

Candidates for admission to this school must pass a written entrance examination in the following studies:—

ENGLISH.—Grammar, Composition, Spelling, Punctuation, Grammatical Construction.

GEOGRAPHY.—Descriptive, Physical.

HISTORY.—United States, General.

MATHEMATICS.—Advanced Arithmetic, Algebra through Quadratics, Plane Geometry.

LATIN.—Rules of Grammar, Declensions, Conjugations, Construction, Translation of Easy Prose.

PHYSICS.—Elementary.

The candidates are required to make a general average of at least seventy-five per cent. In lieu of this examination, a certificate of graduation from a high school, college, or university, or an entrance certificate to the Freshman class of the academical department of a college or university, may be accepted,—the institutions, however, granting these certificates, to be accredited as standard by the communities within which they are located. In admitting to advanced standing, students who have taken a partial course in other colleges, evidence from such students will be required that their first matriculation was in accordance with the requirements under this rule governing the entrance examination.

SPECIAL.—All applicants for admission will be examined as to their adaptability to the peculiar work and training necessary for the successful pursuit of the dental profession.

Examinations for admission are conducted in writing, and are held at the building of the Medical School the second Monday in June and the first Tuesday in October, beginning at 10 A.M.

In certain cases, candidates living at a distance may take the entrance examination at some place nearer home. For further information on this point applications should be made to the Secretary.

It is essential that all those intending to take the examination in Boston should present themselves on the dates specified in the calendar.

Students who began their professional studies elsewhere may be admitted to advanced standing on furnishing a certificate of having passed satisfactorily the examinations in the studies pursued by the class to which they seek admission, and on furnishing satisfactory evidence of the time spent in study at some reputable dental or medical school.

ATTENDANCE.

The School year begins the first Wednesday in October, and ends the third Wednesday in June. A student cannot be received in full and regular standing who presents himself later than ten days after the commencement of the term. In order, therefore, that the time of study shall count for a full year, students must register with the Secretary within ten days after the first Wednesday in October.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF DENTAL MEDICINE.

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following requirements :—

1. They must have notified the Secretary in writing by May 1 of their intention to enter the School.
2. They must be twenty-one years of age, and of good moral character.
3. They must have attended three full courses of study at some reputable dental or medical college, two of which shall have been at a dental college, and at least the last year at this school.
4. They must have passed all the required examinations, and have satisfied the professors of Operative and Mechanical Dentistry that they have the ability to meet the requirements of the profession.
5. They must have deposited with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course, under the supervision of the Professor of Mechanical Dentistry.
6. They must have completed the required dissection.

INSTRUMENTS.

With the exception of the extracting instruments, lathes, and vulcanizers, each student is required to furnish his own instruments, tools, and appliances, for both laboratory and operating-room, and is also required to furnish all metals used in laboratory work.

DIVISION OF STUDIES.

Freshman Year.—Anatomy, Physiology, Chemistry, Histology, Operative Technics, with final examinations at the close of the year; Operative, Clinical, and Mechanical Dentistry, with examinations for progress at the close of the session.

Junior Year.—Materia Medica and Therapeutics, Pathology and Bacteriology, Surgical Pathology, with final examinations at the close of the session; Orthodontia, Operative, Clinical, and Mechanical Dentistry, with examinations for progress at the close of the session.

Senior Year.—Practice of Dental Medicine, Anaesthesia and Oral Surgery, Orthodontia; Operative, Clinical, and Mechanical Dentistry, with final examinations in all the studies of the year at the close of the session.

Course of Instruction.

DENTAL SCIENCE AND OPERATIVE DENTISTRY.

The instruction in Dental Science and Operative Dentistry is both didactic and practical. The professor and other instructors endeavor to demonstrate all approved methods of performing operations upon the teeth and surrounding tissues.

The origin and treatment of decay, the materials for filling teeth, and the most improved instruments and appliances used in operating upon the teeth are discussed. Frequent clinics are held at the Infirmary, and every available means is employed to make the students practically acquainted with this important branch of dental science.

CLINICAL DENTISTRY.

The method of instruction in Clinical Dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of the various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical Operative Dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA.

The course of instruction in Prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course to the Freshman class in making and tempering instruments. Particular attention is given to the practical manipulation of vulcanite, celluloid, aluminum, and cast metal for dentures ; to gold plate work and the application of continuous gum to platina ; to the manufacture of porcelain teeth in single and block forms, and to crown

and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure (from taking the impression to the completion of the case and its proper adjustment in the mouth), are thoroughly discussed.

ORTHODONTIA.

The most important part of the course in Orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

DENTAL TECHNICS.*

A well-lighted and convenient room has recently been fitted for the use of the class in Operative Technics. Instruction will be given in this department, both by lectures from the instructor in charge, illustrated by models and lantern slides, and by practical work on the part of the students. The practical work will include the study of the forms of teeth, with carvings in ivory, study of the position and form of pulp chambers and canals, with dissection of teeth, proper methods of opening and filling pulp canals, with operations on natural teeth; also proper methods of forming cavities for filling, and the manipulation of filling materials.

THEORY AND PRACTICE OF MEDICINE.

The course in the Theory and Practice of Medicine consists of a series of lectures given to the dental students by members of the Faculty and Board of Instruction of the Medical School. It is intended to include such subjects as General Infectious and Contagious Diseases; Syphilis;

* NOTE.—The operations in the Technical Departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

Stomatitis and Tonsilitis ; Diseases of the Heart, Kidneys, and Skin ; Neuralgia and Neurasthenia ; Disorders of the Alimentary Tract ; Pregnancy ; Tuberculosis. Lectures upon Legal Medicine, will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Webber, Austin, Arnold, White, Stowell, and Harding, of the Medical School, will contribute to this series of lectures.

ORAL SURGERY.

It is the intention in the department of Oral Surgery to afford instruction not only in the local affections which occur in the tissues about the oral cavity, but also to acquaint the student with such subjects in general surgery as have even remote connection with Oral and Dental Surgery. The lectures are supplemented by frequent clinics, both at the Infirmary and at the Hospital, The use of anaesthetics is exemplified in the weekly clinics for extraction, and in the hospital service of the Professor of Surgery.

ANATOMY.

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in this subject will consist of lectures, recitations, and practical work in the dissecting-room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

CHEMISTRY.

The course in Chemistry is divided into two parts. During the first half of the Freshman year it is the same as is given to students of the Medical School. There are five lectures and recitations each week, with six hours of work in the laboratory, including Descriptive Chemistry, Qualitative Analysis, and so much of Theoretical Chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is taken up at considerable length, and special reference made to those which are of interest in dentistry or medicine.

During the second half of the Freshman year this preliminary chemical training is followed by lectures, recitations, and laboratory work in Dental Chemistry. The metals with their alloys and salts as used in dentistry, the bones and teeth, the saliva, and the chemistry of the mouth are carefully studied, and such information acquired as is necessary for the intelligent practice of the profession.

MATERIA MEDICA AND THERAPEUTICS.

Instruction in this department consists of lectures and recitations, three hours a week during the year. Especial attention is given to the consideration of the physiological action of drugs in its relation to their therapeutical application; to the relation always existing between rational therapeutics and physiological and pathological laboratory work, and to a thorough description of the essential properties of remedies employed. Samples of drugs will be shown. Demonstrations by the aid of assistants will be made of the various laboratory processes, and the methods of application of the various remedies used in practice will be taught. Prescription writing and the metric system will receive careful attention. Such of the recent additions to Materia Medica as are deemed worthy will be properly considered.

PHYSIOLOGY.

The instruction in Physiology for the dental students is identical with that presented to the medical class, the doctor of dental medicine at present requiring a thorough knowledge of this subject for the adequate practice of his profession. The course is given throughout the latter half of the first year. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of Foster's Text Book of Physiology is required, the stress being placed upon the human bodily functions. The lectures set forth the principles of General Physiology, and suggest some of its relations to the allied sciences, especially Psychology. In the laboratory, the student has opportunity to acquire a degree of skill in the use of physiological apparatus, demonstrating for himself meanwhile some of the most important facts of the science. The conferences give volunteers opportunity to become familiar with the literature of interesting topics, which are then presented briefly in written reports and freely discussed by the class.

HISTOLOGY.

The subject of Histology covers the second half of the Freshman year. The course during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the course covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. The second half of the course will be devoted exclusively to the study of Dental Histology.

Particular attention will be given to the study of the minute anatomy of the tooth. The development of the teeth will receive especial attention, and it will be the aim of the department to present the latest ideas upon this most important branch of dental science. Too much stress can hardly be laid upon this part of the student's training, as

an adequate knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which (on the payment of a small fee) will be at the service of such as cannot furnish instruments of their own.

PATHOLOGY.

The course in Pathology will consist of lectures, recitations, and demonstrations. The subject of General Pathology will be thoroughly covered, and the Special Pathology of the mouth, respiratory, and intestinal tracts will be given special attention. The work will include microscopical as well as gross demonstrations.

BACTERIOLOGY.

Instruction in Bacteriology will consist of lectures, demonstrations, and laboratory work. The course will include a study of the growth and modes of action of bacteria, and special attention will be paid to those organisms which are found in the mouth. In connection with the pathology of suppuration and dental caries, the organisms responsible for these conditions will be studied in all their relations.

EXAMINATIONS.

There are two examinations held each year in the building of the Dental School. They are in writing, and are held at the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of dentistry.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in their examination upon a subject will not be admitted to a third examination without the payment of an examination fee of ten dollars.

Students are eligible for their examination as follows: those of the Freshman year at the close of the first year's course; those of the Junior year at the close of the second year's course, provided they have passed a majority of the Freshman examinations; those of the Senior year at the close of the third year's course, provided they have passed all the Freshman and a majority of the Junior examinations.

TEXT-BOOKS.

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gerrish, Gray, Weisse, Quain, Morris.

Physiology.—Foster, The American Text-book, Landois and Sterling, Verroin, Porter, Schäfer.

Chemistry.—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Histology and Microscopy.—Schäfer, Stohr's-Tome's Dental Anatomy (last edition).

Pathology and Bacteriology.—Burchard's Dental Pathology and Therapeutics, Miller's Micro-Organisms of the Mouth.

Dental Technic.—Black's Dental Anatomy.

Surgery.—Senn's Principles of Surgery, Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, Warren's Surgical Pathology, International Text-Book.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Week's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthodontia.—Essig's American Text-Book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans' Crown and Bridge Work, Gilbert's Vulcanite and Celluloid, Haskell's Student's Handbook.

Medical Dictionary.—Gould, Dunglison.

FEEES AND EXPENSES.

Matriculation, yearly	\$5.00
Freshman laboratory ticket	5.00

Junior laboratory ticket	5.00
Demonstrator of Anatomy ticket (once only)	5.00
General lecture ticket	100.00
Postgraduate fee	50.00
Graduation fee	30.00
Dissecting-material	At cost.

Payment in full must be made at the commencement of the term. The College Bursar will be in regular attendance at the school for the purpose of collecting fees, a notice of the days and hours having been previously posted upon the bulletin.

The graduation fee is payable on or before the first day of May, and no degree will be conferred until the Bursar certifies that all fees have been settled.

The student's general expenses can be reduced, in accordance with his means, to the standard which prevails in other cities. The clerk at the Infirmary keeps a list of boarding-houses in the vicinity of the College building, varying in rate of charge from four dollars a week upwards.

General Information.

SESSIONS.

There is but one yearly session of the school. There are no exercises at the school during the evening.

The annual course of lectures for 1901-1902 will commence on Wednesday, Oct. 2, 1901, at 3 P.M.

VACATIONS.

There are no exercises at the school during three days at Thanksgiving, the weeks of Christmas and Easter, nor upon Washington's birthday, Patriot's Day, and Memorial Day.

Students intending entering the school are requested to fill out the official blank and forward it to the Secretary, and to bring the certificates of their previous education with them.

Requests for the Annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Dental School, Boston, Mass.

**THE BROMFIELD-PEARSON
SCHOOL**

The Bromfield-Pearson School.

BOARD OF INSTRUCTION.

ELMER H. CAPEN, D.D., PRESIDENT.

GARDNER C. ANTHONY, A.M.,
DEAN, and Professor of Technical Drawing.

WILLIAM R. WHITEHORNE, A.M.,
Instructor in Mathematics.

SAMUEL C. EARLE, A.M.,
Instructor in French and English.

CHARLES H. CHASE, S.B.,
Superintendent of Shops.

BROMFIELD-PEARSON SCHOOL.

The Bromfield-Pearson School.

The Bromfield-Pearson School provides special courses of technical instruction for those who are qualified by previous education and maturity of mind to prepare for any of the Engineering Courses of Tufts College in one year, or to pursue with equal advantage the special two-years' course of the school.

The first year may be taken as preparatory, either to the Engineering Departments of the College, or to the technical course of the school.

The course for the second year is arranged to meet the wants of those who are unable to pursue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes Elementary Mathematics, Mechanics, and Technical Drafting.

ADVANTAGES TO BE DERIVED FROM THE COURSE.

Students who pursue the preparatory course, and complete the work satisfactorily, will be admitted to the College on certificate.

Except in the elementary instruction in Mathematics and English, the courses pursued are, in most respects, identical with those of the College.

Students who are partially prepared to enter the College may pursue advanced work in anticipation of their engineering studies, and thus shorten their college course.

Students who pursue the two-years' course, and later decide to enter the College, will receive full credit, by the College, for all work satisfactorily performed which is equivalent to that required in the Engineering Department.

The association with college work and college men places the student in better position to pursue his advanced studies.

The Gymnasium, Library, Laboratories, and Lecture-courses of the College are open to students of the school.

The mechanical equipment of the school is such as to afford exceptional opportunities for pursuing the practical courses in Carpentry, Moulding, Pattern Work, Forging, and Machine Work.

THE BUILDING.

The Bromfield-Pearson Building is a three-story building, 100 by 50 feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the school, and for the use of the department of drawing and shop-work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are shops for forging, moulding, pattern-making, and machine work. These are equipped with modern tools and in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shop, and, together with a ten-horse-power plain slide valve engine, serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the school, provides the drafting-rooms and shops with electric light. One room is set apart as a study for such of the students as do not room at the College.

Course of Study.

FIRST YEAR.

Preparatory Course.

ALGEBRA is begun, and during the first three-quarters of the year will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

GEOMETRY is begun during the first term, and continued throughout the year. The course comprises plane geometry and all of solid geometry, including spherical.

PLANE TRIGONOMETRY may be taken during the fourth quarter.

ENGLISH GRAMMAR AND COMPOSITION is pursued throughout the year.

FRENCH for the entire year is required of those who are preparing for a college course. Special students may elect French.

DRAWING (Freehand) comprises the course required for entrance to the College, together with technical sketching and lettering.

DRAWING (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the course in freehand are identical with the college course in drawing, and all, or a part, may be omitted by students fitting for College.

DESCRIPTIVE GEOMETRY may be taken by such students as are sufficiently prepared to enter the college class. This is pursued during the second term, and is required of those taking the two-years' course.

SHOPWORK is elective, and may be taken at any time when it will not interfere with required work.

Electives.

Those who are sufficiently prepared in any of the above studies may elect more advanced subjects, as follows :—

Preparation in elementary algebra, as indicated above, will admit to the course in college algebra.

Preparation in elementary algebra, plane and solid geometry, will admit to Freshman mathematics.

As the instruction in drawing is largely individual, the student may take the grade for which he is prepared.

SECOND YEAR.

Special Engineering Course.

This part of the course is intended only for those who do not enter the Engineering Department of the College. Students will, however, be admitted to college classes for which they may be fitted.

ADVANCED ALGEBRA AND TRIGONOMETRY are pursued with the college classes during the first term.

ANALYTICAL GEOMETRY is taken during the second term.

CALCULUS is studied during the second term. This course is elementary, and is designed to give the student such a knowledge of the practical use of the science as shall enable him to read, in an intelligent manner, books involving its use.

MECHANICS is pursued for one term, and the subjects assigned for design are such as to afford a practical application of the theory. This includes the subject of Graphic Statics.

MACHINE DRAWING. Much attention has been given to the method of presenting the work in Machine Drawing, in order to enable the student to gain, in the shortest time, a comprehensive knowledge of the practical methods for the graphic representation of mechanical ideas. This work is conducted in precisely the same manner as in a well-organized drafting-room. It consists largely of free-hand sketches and plainly finished drawings, made accord-

ing to the most approved systems. Each student is provided with a time-card, on which a record is kept of the time employed in the execution of all drawings. It is not only necessary that drawings be well made, and accurate, but that a reasonable time be employed in their execution.

MECHANISM. Under this head the subject of cams, gearing, links, and other mechanical motions is treated, and much stress is laid on the practical application of the principles. It is taught by means of graphic problems, and by lectures and recitations.

MACHINE DESIGN is begun as soon as the student has become proficient in the preceding courses, and has acquired neatness, accuracy, and rapidity of execution. He is now encouraged to think and act for himself, thereby developing his intuitive ability and self-reliance. Many of the methods used in connection with this study are believed to be original with the school, and have resulted in a great saving of the student's time.

STEAM ENGINE. A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of **VALVE GEARS** is considered at this time. The student is also taught to apply the **INDICATOR**, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

MOULDING. A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns. This work is of a very practical nature, consisting of the moulding of a great variety of patterns, the making of cores, and finally the casting of the more important pieces.

SURVEYING. Such practice in the use of transit and level is afforded the student as shall familiarize him with their use, and enable him to make a simple survey.

Electives.

The following courses may be pursued in connection with the foregoing, when time and previous preparation will permit :—

PATTERN-MAKING. The course in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding. *Six hours a week (first half-year); three hours a week (second half-year).*

FORGING. In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, up-setting, welding, tempering, and case-hardening. *Three hours a week (second half-year).*

MACHINE WORK. Vise work in iron includes surface chipping, squaring, and fitting, key-seating, scraping, and polishing. The machine practice consists not only in the operation of turning, planing, drilling, boring, and milling operations, but in a careful study of the machines, their efficiency, and capabilities. *Six hours a week (second half-year).*

PHYSICS. The aim is to present the science of Physics, not as a series of detached subjects, but as a consistent body of doctrine, in which mechanical principles hold throughout, from which all the various phenomena are deducible. Hence, in each branch of the subject there are frequent returns to these first principles. The rapid development of electrical science having quite outstripped text-books, this subject is treated wholly by lectures. *Three hours a week for the year.*

PHYSICAL LABORATORY. In the Physical Laboratory, beginners are given Stuart and Gee's Practical Physics, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satis-

factory results are obtained. Glazebrook and Shaw's Practical Physics is followed on the subjects of sound, heat, and light, Pickering's Manipulation and Kohlrausch's Measurements being also used to a limited extent. In electricity and magnetism Stewart and Gee's second volume is mainly followed, supplemented, in case of engineering students, by parts of Gray's Absolute Measurement, and Kempe's Testing. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. *Six hours a week (second half-year).*

CHEMISTRY. Instruction in this subject is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, are intended to cover the ground of theoretical and descriptive inorganic chemistry, and to give the student a thorough knowledge of chemical theories and of the more important chemical elements and their compounds. Many of the methods for manufacturing chemical products for the market are carefully considered. The laboratory work occupies one-half of the time allotted to General Chemistry. Each student has ample opportunity to test experimentally the truth of chemical theories, and to become familiar with chemical substances and their behavior. The lectures are supplemented by recitations and written exercises. Students are charged for breakage, and four dollars a term for materials used. *Three hours a week for the year.*

General Information.

REQUIREMENTS FOR ADMISSION.

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they may elect. This may be done by certificate from a school

previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations, either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

REGULATIONS OF THE SCHOOL.

Students are subject to the rules governing college students.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon, and any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular college courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Only such students are encouraged to enter as are thoroughly in earnest and desire to make the most of their opportunities. To such the institution offers exceptional opportunities.

Certificates of proficiency are given the special engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows : sixty dollars on or before the 5th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons at \$3.50 per week; in private families at \$3.50 to \$5.00 for table board, and \$1.50 to \$2.00 for furnished room. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses :—

Tuition	\$120.00	\$120.00
Half-room rent	15.00	75.00
Board, \$3.50 to \$4.50 a week (36 weeks)	126.00	162.00
Physical training		10.00
Books, instruments, and supplies . .	15.00	25.00
Total	<u>\$276.00</u>	<u>\$392.00</u>

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

THE SUMMER SCHOOLS

The Summer Schools.

INSTRUCTORS.

FRANK W. DURKEE, A.M.,
Professor of Inorganic Chemistry.

VIRGIL L. LEIGHTON, A.M., PH.D.,
Instructor in Organic Chemistry.

FRANK G. WREN, A.M.,
Assistant Professor of Mathematics.

THOMAS WHITTEMORE, A.B.,
Assistant Professor of English.

J. STERLING KINGSLEY, S.D.,
Professor of Biology.

FRED D. LAMBERT, PH.D.,
Instructor in Natural History.

The Summer Schools.

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In 1898 Biology was offered. In the summer of 1900, classes in Mathematics and English were added. Six of the regular college subjects in Chemistry numbered 1, 2, 3, 4, 5, and 10 (see pages 83 and 84), are regularly taught. Each subject has allotted to it the same number of lecture and laboratory periods as are provided in the regular college curriculum. When satisfactorily completed, the term hours which the subjects represent can be counted toward the number required for a degree. Subjects 1, 4, and 6 represent six term hours each, and 2, 3, and 10, three term hours each. Applicants for admission to the College in the autumn, who wish to offer chemistry for an entrance credit, can do the required work in the school, if not previously prepared for an examination. The school, furthermore, provides an opportunity for teachers in secondary schools to obtain a teaching knowledge of general inorganic chemistry, an elementary knowledge of organic chemistry, and to carry forward the study of chemical analysis.

In Mathematics, the courses given in the session of 1900 were equivalent to the subjects numbered 5, 7, and 8.

In English, work in literature and in composition was done, the work in literature being the equivalent of English 15 (see page 60).

The sessions of the school have been held in the Chemical Building of the College, which is well equipped with lecture-room, laboratories, and modern apparatus for all kinds of chemical work, and in the building of the Bromfield-Pearson School.

EXPENSES.

Tuition for Chemistry 1, \$20 ; for Chemistry 2 and 3, \$20, or \$12 for one of the two subjects ; Chemistry 4 and 5, \$20 each ; Chemistry 10, \$15. The cost of the chemicals for each of the subjects 1, 4, and 5 is \$8, and \$4 each for 2, 3, and 10. Breakage depends entirely upon the care of the student, and averages about \$4 in each of the longer courses. The fee for instruction in Mathematics is \$15 for a three-hour subject. In English, \$20 is charged for a subject equivalent to six term hours, and \$12 for one equal to three term hours. Board and furnished rooms can be obtained for \$6 a week, and board for \$3.50 a week. Tuition and cost of chemicals must be paid on the first day of the term.

All communications relative to the Summer School of Chemistry should be addressed to PROFESSOR FRANK W. DURKEE, Tufts College, Mass.; those relative to the Summer School in Mathematics to PROFESSOR FRANK G. WREN, Tufts College, Mass.; those relative to the Summer School in English to PROFESSOR THOMAS WHITTEMORE, Tufts College, Mass.

SUMMER SCHOOL OF BIOLOGY.

The Summer School of Biology, which was established in 1898, will be reopened in the summer of 1901 at South Harpswell, Maine, on the shores of Casco Bay. The locality is one of the most favorable upon the whole Atlantic coast, as the fauna is extremely rich, while the climate is so tempered by the surrounding waters that hot days are unknown.

Three courses will be offered :—(1) Invertebrate Zoology ; (2) Vertebrate Zoology ; (3) Botany. Besides, there will be opportunity for a limited number of investigators. Credit will be given for work completed to the satisfaction of the instructors, as if the courses had been taken at the College. The courses will begin July 8, and will continue for six weeks. The tuition fee will be \$20 for the course.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a peninsula nine miles in length, and is almost entirely surrounded by water. There are several hotels and boarding houses, and board and rooms may be had at five dollars a week and upward. All inquiries concerning the Summer School of Biology should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

REGISTER OF STUDENTS

Students.

GRADUATE DEPARTMENT.

[The right-hand column contains the college residence of every student having such residence, the neighboring cities of Somerville and Medford being thus included. The middle column records the home address.]

Fellow.

SEYMOUR, RAYMOND J. *Columbus, O. East Hall, 12*
B. S., Ohio State University, 1900. Miner Fellow in Natural
History. First Year. Biology.

Resident Students.

Burroughs, Maude, *34 Berkeley St., Somerville.*
A.B., Wellesley, 1899. Second Year. Economics.

Ruddick, William Henderson, *502 East Broadway, So. Boston.*
M.D., Harvard University, 1868; B.A.S., Harvard University,
1881. Fourth Year. Biology.

Whitehorne, William Risby, *14 Elmwood St., Somerville.*
A.B., 1895. Fourth Year. Chemistry.

Non-Resident Student.

Craig, Edward Channing, *Helicon Hall, Englewood, N. J.*
A.B., 1895. Second Year. Modern Languages.

COURSES IN ARTS AND SCIENCES.

[In the following list the course pursued by each student is indicated by the italic letters immediately following the name. The abbreviations are as follows: courses leading to the degree of A.B., *a b*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S. B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and Medical Preparatory, *mp*.]

Senior Class.

Abbe, Lena Pease, <i>a b</i>	<i>Springfield</i>	Allen House
Armstrong, Roger Wellington, <i>a b</i>	<i>Waltham</i>	Dean Hall, 10
Armstrong, Sara Mitchell, <i>a b</i>	<i>79 Buckman St., Everett</i>	
Benedict, Frank Howe, <i>a b</i>	<i>Williamstown, Vt.</i>	West Hall, 13
Berry, Joseph Francis, <i>ph</i>	<i>Mattapan</i>	Dean Hall, 12
Blaisdell, Albert Chester, <i>ph</i>	<i>School St., No. Woburn</i>	
Boutelle, Arthur Maynard, <i>a b</i>	<i>Townshend, Vt.</i>	West Hall, 16½
Browne, Annie Marguerite, <i>a b</i>	<i>13 Winslow Ave., W. Somerville.</i>	
Chilson, Dean Leroy, <i>ce</i>	<i>Franklin</i>	94 Curtis St.
Collins, Lester Wright, <i>ee</i>	<i>Meriden, Conn.</i>	Dean Hall, 10
Day, Francis Adams, <i>ph</i>	<i>Fitchburg</i>	West Hall, 7
Dodge, Carrie Gould, <i>a b</i>	<i>Orleans</i>	Metcalf Hall, 12
Eriksson, August Isidor, <i>a b</i>	<i>Lawrence</i>	Δ T Δ House
Farrell, Ellen Frances, <i>a b</i>	<i>27 Austin St., Somerville</i>	
Foster, Kingsbery, <i>a b</i>	<i>Derby Line, Vt.</i>	West Hall, 8
Frost, Jennie Clifton, <i>a b</i>	<i>58 Old Mystic St., Arlington</i>	
Goodell, Robert Edward, <i>me</i>	<i>Lowell</i>	West Hall, 23
Hawes, Austin Foster, <i>a b</i>	<i>Somerville</i>	East Hall, 34
Hawley, Dexter Reynolds, <i>ee</i>	<i>Waltham</i>	West Hall, 2
Hayford, Frank Leslie, <i>ph</i>	<i>Burlington, Vt.</i>	West Hall, 6
Ingalls, Nowell, <i>a b</i>	<i>58 Burrill St., Swampscott</i>	
Jenkins, Meritt, <i>a b</i>	<i>No. Weymouth</i>	West Hall, 10
Joy, William Macy, <i>ee</i>	<i>Meriden, Conn.</i>	East Hall, 2
Kinne, Edith Buffum, <i>a b</i>	<i>Barre, Vt.</i>	17 Latin Way
Knight, Gertrude, <i>a b</i>	<i>114 Professors Row, Tufts College</i>	
MacQuinn, Marion Putnam, <i>a b</i>	<i>Melrose Highlands</i>	Metcalf Hall, C
Murphy, Louis Sutcliffe, <i>ch</i>	<i>Somerville</i>	West Hall, 9
Perham, Bertha Annah, <i>a b</i>	<i>22 Marshall St., Somerville</i>	
Pierce, Leslie Dean, <i>ph</i>	<i>Rochester, Vt.</i>	Dean Hall, 12
Pipe, Monica Glassboro, <i>ph</i>	<i>21 Francesca Ave., W. Somerville</i>	
Polk, Ellery Channing, <i>a b</i>	<i>Dorchester</i>	West Hall, 11
Price, William Hyde, <i>a b</i>	<i>24 Orchard St., Medford</i>	
Reed, Ethel Gardner, <i>a b</i>	<i>2 Curtis Ave., W. Somerville</i>	
Rinea, Mary Alice, <i>a b</i>	<i>So. Berwick, Me.</i>	Allen House

Rollins, Edwin Butler, <i>e e</i>	<i>Westbrook, Me.</i>	East Hall, 2
Sayles, Christine, <i>a b</i>	<i>Adams</i>	Metcalf Hall, 5
Seede, John Augustine, <i>e e</i>	<i>Lowell</i>	East Hall, 19
Shearer, Edith May, <i>ph</i>	<i>33 Belmont St., Somerville</i>	
Sibley, Julius Russell, <i>a b</i>	<i>Spencer</i>	West Hall, 10
Smith, Reginald Forster, <i>a b</i>	<i>Lowell</i>	Z Ψ House
Spofford, George Rawson, <i>e e</i>	<i>Hudson</i>	West Hall, 13
Thomas, Ralph Danforth, <i>c e</i>	<i>Portland, Me.</i>	Z Ψ House
Tolman, Charlotte Adelaide, <i>ab</i>	<i>23 Everett St., Medford</i>	
Tucker, James Irwin, <i>c e</i>	<i>94 Curtis St., W. Somerville</i>	
Turner, Harry Chester, <i>ph</i>	<i>Tufts College</i>	Θ Δ X House
Walker, Clarence Doane, <i>e e</i>	<i>Stafford Springs, Conn.</i>	East Hall, 19
Wells, Leslie Custer, <i>a b</i>	<i>Foxboro</i>	Δ T House
Wilson, Stanley Calef, <i>a b</i>	<i>Washington, Vt.</i>	West Hall, 15
Woodward, Albert Sewell, <i>a b</i>	<i>Stoneham</i>	West Hall, 1
Wright, Bertha Louise, <i>ph</i>	<i>31 Pearl St., Somerville</i>	
		Metcalf Hall, 16

Junior Class.

Austin, William Willis, <i>e e</i>	<i>Salem</i>	Δ T House
Bailey, Dana Clark, <i>a b</i>	<i>Cumberland Mills, Me.</i>	West Hall, 19
Baker, Clair Lincoln, <i>ch</i>	<i>Wollaston</i>	Θ Δ X House
Bixby, Herbert Dallas, <i>ph</i>	<i>Lowell</i>	A T Ω House
Brade, William Abram, <i>a b</i>	<i>Tufts College</i>	West Hall, 32
Burke, Josephine Rosamond, <i>a b</i>	<i>157 Albion St., Somerville</i>	
Capen, Ruth Paul, <i>a b</i>	<i>Tufts College</i>	
Chubb, Thomas Briggs, <i>c e</i>	<i>Tufts College</i>	East Hall, 1
Coolidge, Richard Bradford, <i>a b</i>	<i>Woodfords, Me.</i>	Θ Δ X House
Cooper, Ashton B, <i>e e</i>	<i>Bloomfield, Ont.</i>	Z Ψ House
Dame, Ruth Burleigh, <i>a b</i>	<i>Hastings Lane, Medford</i>	
Danforth, Joseph Dexter, <i>a b</i>	<i>Tyngsboro</i>	East Hall, 3
Dodge, Bertha Alma, <i>a b</i>	<i>Williamsville, Vt.</i>	10 Raymond Ave.
Endicott, Winthrop Tingley, <i>e e</i>	<i>Chelsea</i>	Δ T House
Fox, Carrie Edwards, <i>a b</i>	<i>109 College Ave., W. Somerville</i>	
Hapgood, Ernest Granger, <i>a b</i>	<i>Brockton</i>	West Hall, 17
Hersey, Arthur William, <i>c e</i>	<i>Dorchester</i>	West Hall, 3
Holmes, Isabel, <i>a b</i>	<i>Kingston, N. Y.</i>	Metcalf Hall, 10
Husted, Alfred Pomfret, <i>e e</i>	<i>Albany, N. Y.</i>	West Hall, 28
Hussey, Harry Brigham, <i>e e</i>	<i>Hudson</i>	West Hall, 29
Ingalls, Granville, <i>ph</i>	<i>Swampscott</i>	West Hall, 9
Johnson, Edna Henderson, <i>a b</i>	<i>Spencer</i>	Metcalf Hall, 13
Knight, Mabel Frances, <i>a b</i>	<i>18 Hazel Park, Everett</i>	
Lewis, Kate Brooks, <i>a b</i>	<i>130 Allston St., West Medford</i>	
Lovell, Sarah Emily, <i>a b</i>	<i>Wayland</i>	

Lunt, Forrest Sumner, <i>a b</i>	<i>Somerville</i>	West Hall, 6
Lyon, Blanche Elizabeth, <i>a b</i>	<i>392 Broadway, Somerville</i>	
McCoy, Agnes Irene, <i>a b</i>	<i>62 Main St., Somerville</i>	
Manbert, Ray Barton, <i>a b</i>	<i>Buffalo, N. Y.</i>	Θ Δ X House
Manchester, Albert Everett, <i>m e</i>	<i>Providence, R. I.</i>	West Hall, 29
Moors, Charles Ernest, <i>a b</i>	<i>Marlboro, N. H.</i>	West Hall, 19
Morley, Herbert Morley, <i>e e</i>	<i>Newton Centre</i>	East Hall, 20
Morse, Arthur Henry, <i>a b</i>	<i>Salem</i>	Δ T House
Paine, Alice Cecile, <i>ph</i>	<i>Hyde Park</i>	17 Latin Way
Parker, Mary Bates, <i>a b</i>	<i>19 High St., Everett</i>	
Paterson, Fred William, <i>e e</i>	<i>Portsmouth, N. H.</i>	Dean Hall 5
Paul, Emma Franklin, <i>a b</i>	<i>23 Monmouth St., Somerville</i>	
Peirce, Herbert Russell, <i>ph</i>	<i>27 Appleton St., Arlington Heights</i>	
Rallion, Harriet Elizabeth, <i>a b</i>	<i>Norwich, Conn.</i>	Metcalf Hall, 10
Ramsay, Helen Mabel, <i>a b</i>	<i>Fall River</i>	12 Emery St.
Richardson, Horace Kimball, Jr.	<i>108 Dudley St., Medford</i>	
Roberts, Blanche Ethel, <i>a b</i>	<i>Malden</i>	Metcalf Hall, 9
Rogers, Bernice Gertrude, <i>a b</i>	<i>Belfast, Me.</i>	2 Curtis Ave.
Russell, Elizabeth Adams, <i>a b</i>	<i>182 Cambridge St., Winchester</i>	
Schneck, Emil Monger, <i>c e</i>	<i>Shelburne Falls</i>	Middle Hall, 11
Schoolfield, Harrison Herbert, <i>e e</i>	<i>Tufts College</i>	East Hall, 20
Shute, Henry Martin, <i>a b</i>	<i>Salem</i>	Δ T House
Stowell, Edith Helen, <i>ph</i>	<i>Farley</i>	2 Curtis Ave.
Sturtevant, Malcolm Eben, <i>a b</i>	<i>Somerville</i>	East Hall, 34
Tarr, Forrest Elliott, <i>c e</i>	<i>Marblehead</i>	West Hall, 2
Titus, Marian Lucy, <i>a b</i>	<i>10 Raymond Ave., W. Somerville</i>	
Tuttle, Florence Rollins, <i>a b</i>	<i>Salem</i>	Metcalf Hall, A
Watkins, Florice Alison, <i>a b</i>	<i>So. Manchester, Conn.</i>	17 Latin Way
Wood, Harry Lovell, <i>a b</i>	<i>Providence, R. I.</i>	West Hall, 30
Woodbridge, Arthur Gerry, <i>a b</i>	<i>Medford</i>	Z Ψ House

Sophomore Class.

Bearce, Clarence Prescott, <i>ch</i>	<i>West Medford</i>	West Hall, 27
Brown, Walter Campbell, <i>e e</i>	<i>Castine, Me.</i>	Δ T House
Bruce, Blanche Louise, <i>a b</i>	<i>7 Highland Ave., Stoneham</i>	
Bursch, Clare Louise, <i>ph</i>	<i>Hyde Park</i>	Metcalf Hall, 1
Bush, Edith Linwood, <i>a b</i>	<i>Chelsea</i>	Metcalf Hall, 4
Cannell, Winburn Scott, <i>a b</i>	<i>Bridgton, Me.</i>	85 Jenny Lind Ave.
Coolidge, Arthur William, <i>a b</i>	<i>Portland, Me.</i>	West Hall, 27
Coombs, Isabel Hall, <i>a b</i>	<i>Stoneham</i>	Metcalf Hall, 14
Creeley, Oscar Slade, <i>sc</i>	<i>Belmont</i>	East Hall, 18
Crowell, Hannah Cecile, <i>ph</i>	<i>Woods Holl, Mass.</i>	Metcalf Hall, 7
Dame, Olive Arnold, <i>a b</i>	<i>Hastings Lane, Medford</i>	
Farnsworth, Louise Melinda, <i>a b</i>	<i>Natick</i>	Metcalf Hall, 12

Fisher, Gertrude Isabelle, <i>a b</i>	<i>Fitchburg</i>	9 Raymond Ave.
Friend, Edna Mary, <i>a b</i>	<i>33 Wallace St., W. Somerville</i>	
Gibbs, Julia Frances, <i>a b</i>	<i>51 Harris St., Waltham</i>	
Hayden, Philip Meserve, <i>a b</i>	<i>Augusta, Me.</i>	Δ T House
Hersey, Harry Adams, <i>a b</i>	<i>Dorchester</i>	West Hall, 3
Hixon, Beulah Sinclair, <i>a b</i>	<i>Chelsea</i>	Metcalf Hall, 15
Kennard, William Oliver, <i>c e</i>	<i>56 Pinckney St., Somerville</i>	
Kingsley, Mary Winship, <i>a b</i>	<i>128 Professors Row, Tufts College</i>	
Knight, Thomas Sawyer, <i>e e</i>	<i>114 Professors Row, Tufts College</i>	
Lauriat, Leonard, <i>e e</i>	<i>Medford</i>	Middle Hall, 12
Lewis, Henry Palmer, <i>ph</i>	<i>Randolph, Vt.</i>	East Hall, 10
Linscott, Harry DeLuce, <i>ph</i>	<i>No. Woburn</i>	East Hall, 4
Littlefield, Ethel Frances, <i>a b</i>	<i>Braintree</i>	Allen House
Low, William Henry, <i>ch</i>	<i>No. Cambridge</i>	East Hall, 6
Lowell, Charlotte Raymond, <i>a b</i>	<i>37 Harvard St., Somerville</i>	
Lyons, Lena Abbie, <i>a b</i>	<i>Bradford</i>	Metcalf Hall, 3
Marion, Guy Elwood, <i>a b</i>	<i>Woburn</i>	East Hall, 8
Merritt, Harry Tirrell, <i>ph</i>	<i>So. Weymouth</i>	East Hall, 4
Moore, Ethel Almira, <i>a b</i>	<i>37 Madison St., Somerville</i>	
Moulton, Oren McKenney, <i>c e</i>	<i>Gorham, Me.</i>	15 Curtis Ave.
Murphy, Arthur, Jr. <i>ch</i>	<i>Wollaston</i>	East Hall, 18
Page, Harry Stanley, <i>e e</i>	<i>Mountain Ave., No. Woburn</i>	
Pember, Martha Euphemia, <i>a b</i>	<i>Bangor, Me.</i>	Metcalf Hall, 3
Price, Lawrence Marsden, <i>a b</i>	<i>24 Orchard St., Medford</i>	
Puffer, Ethyl Winnifred, <i>a b</i>	<i>9 Raymond Ave., W. Somerville</i>	
Ryan, Olive Katherine, <i>a b</i>	<i>274 School St., Waltham</i>	
Spring, George Edward, <i>ph</i>	<i>Holliston</i>	West Hall, 19
Story, Chester Bradstreet, <i>ph</i>	<i>Uxbridge</i>	Middle Hall, 7
Wills, John Burdett, <i>e e</i>	<i>126 Highland Ave., Winchester</i>	
Wood, Chandler Mason, <i>a b</i>	<i>Fort Plain, N. Y.</i>	Dean Hall, 5

Freshman Class.

Barnett, Stella May, <i>a b</i>	<i>Attleboro Falls</i>	Metcalf Hall, 2
Berry, Charles, Franklin, Jr. <i>a b</i>	<i>Mattapan</i>	West Hall, 21
Bigwood, Alfred Wilson, <i>a b</i>	<i>Cochituate</i>	
Bond, Alfred Moore, <i>e</i>	<i>Hudson</i>	Dean Hall, 11
Bray, Bertha, <i>a b</i>	<i>98 Professors Row, Tufts College</i>	
Bray, Compton D., <i>a b</i>	<i>98 Professors Row, Tufts College</i>	
Burnell, William Victor, <i>e</i>	<i>Cleveland, O.</i>	West Hall, 18
Burton, Arthur W., <i>e</i>	<i>7 Fayette St., Cambridge</i>	
Cannon, Austin L., <i>e</i>	<i>42 Winthrop St., Charlestown</i>	
Champlin, William Rose, <i>a b</i>	<i>Block Island, R. I.</i>	West Hall, 24
Chism, James Whiton, <i>e</i>	<i>Westford, Conn.</i>	East Hall, 21
Clark, Alice Wellington, <i>a b</i>	<i>Waltham</i>	

Clark, Alvar Warren, <i>a b</i>	<i>47 College Ave., W. Somerville</i>
Clark, Georgiana Marie, <i>a b</i>	<i>60 Central St., Somerville</i>
Clifford, John William, <i>ph</i>	<i>Naugatuck, Conn.</i>
Clough, James Carrier, <i>ch</i>	<i>Enfield, N. H. West Hall, 16</i>
Colcord, Elmer E., <i>e</i>	<i>So. Franklin, Vt. Middle Hall, 9</i>
Collings, Edna Elizabeth, <i>ph</i>	<i>Wakefield Allen House</i>
Collins, Ida Lillian, <i>a b</i>	<i>4 Franklin St., Everett</i>
Colomy, Edward Wilmot, <i>e</i>	<i>Bangor, Me. East Hall, 31</i>
Countway, Gussanda, <i>a b</i>	<i>28 Robinson St., Somerville</i>
Crowell, Mertie, <i>a b</i>	<i>Woods Holl Metcalf Hall, 7</i>
Cummings, Alice Josephine, <i>a b</i>	<i>209 Main St., Medford</i>
Curtis, Helen Clare, <i>a b</i>	<i>Addison Point, Me.</i>
	<i>61 Winthrop St.</i>
Cushing, Mary Magdalen, <i>ph</i>	<i>168 Newbury St., Boston.</i>
Draper, Ernest Sparrell, <i>e</i>	<i>Wayland East Hall, 5</i>
Farr, Irvin Harris, <i>m p</i>	<i>Holyoke East Hall, 28</i>
Farrar, Edward Leslie, <i>e</i>	<i>Assinippi East Hall, 23</i>
Fay, Harold, <i>a b</i>	<i>92 Professors Row, Tufts College</i>
Fleming, Patrick W., <i>e</i>	<i>Thorndike 69 Royal St.</i>
Forrest, Oscar Edmund, <i>e</i>	<i>Medford A T House</i>
Frossard, Helen Amelia, <i>a b</i>	<i>East Pepperell Metcalf Hall, 6</i>
Galarneau, Dennis Camille Amedée, <i>a b</i>	<i>Holyoke East Hall, 7</i>
Gammon, Robert Clair, <i>e</i>	<i>77 Hawthorne St., Lynn</i>
Glenton, Frederico, Jr. <i>e</i>	<i>Nashua, N. H.</i>
Greene, Harry Marlon, <i>a b</i>	<i>Haverhill 47 College Ave.</i>
Harmon, Betsey Barker, <i>a b</i>	<i>Adams Metcalf Hall, 6</i>
Harrington, George Lawrence, <i>e</i>	<i>W. Somerville East Hall, 33</i>
Harris, Anthony, <i>e</i>	<i>Cambridge Z Ψ House</i>
Hazeltine, William Everett, <i>e</i>	<i>17 Beede Ave., Lynn.</i>
Hill, Charles Willis, <i>a b</i>	<i>Salem East Hall, 30</i>
Hill, Robert William, <i>a b</i>	<i>Salem East Hall, 30</i>
Hill, Sherburne, <i>e</i>	<i>Lawrence 119 Winthrop St.</i>
Hollins, Arthur Samuel, <i>e</i>	<i>Auburn, Me. West St.</i>
Holt, Roland G., <i>e</i>	<i>Hudson Dean Hall, 11</i>
Hood, James Henry, <i>e</i>	<i>Franklin East Hall, 16</i>
Hooper, Blanche Heard, <i>a b</i>	<i>124 Professors Row, Tufts College</i>
Jenness, Earle R., <i>a b</i>	<i>Barton, Vt. West Hall, 1.</i>
Kaula, Frank Edward, <i>a b</i>	<i>38 Richdale Ave., Somerville.</i>
Lord, Philip D. M., <i>a b</i>	<i>Biddeford, Me. East Hall, 25</i>
Lynch, Maurice A., <i>ph</i>	<i>So. Hadley Falls East Hall, 15</i>
McAllister, Florence Lillian, <i>a b</i>	<i>23 Wallace St., W. Somerville</i>
McDonald, William Thomas, <i>a b</i>	<i>43 Greenville St., Somerville</i>
MacFarlane, William J. Jr., <i>e</i>	<i>Pittsfield, Me. East Hall, 25</i>
McMahon, Charles Edward, <i>a b</i>	<i>Randolph West Hall, 14</i>

Marr, Myron W., <i>m p</i>	<i>585 Washington St., Dorchester</i>	
Marshall, Venice Margherita, <i>sc</i>	<i>New Salem</i>	Allen House
Marshall, Wilbert Burhoe, <i>e</i>	<i>67 Mt. Auburn St., Cambridge</i>	
Mason, Joseph Eaton, <i>a b</i>	<i>Chicago, Ill.</i>	Z & Y House
Maxwell, Leon Ryder, <i>a b</i>	<i>Medford</i>	Middle Hall, 10
Mayhew, Alfred B., <i>e</i>	<i>Shelburne Falls</i>	Middle Hall, 5
Merrill, John Bryant, <i>ph</i>	<i>Bangor, Me.</i>	East Hall, 6
Moore, Fred Atkins, <i>a b</i>	<i>10 Grant St., Somerville</i>	
Morley, Raymond Kurtz, <i>a b</i>	<i>Newton Centre</i>	East Hall, 17
Munro, Melville Smith, <i>e</i>	<i>Medford</i>	Δ T House
Nason, Robert Edward, <i>a b</i>	<i>Jamaica Plain</i>	West Hall, 27
Newell, Lewis Winslow, <i>ph</i>	<i>Salem</i>	East Hall, 32
Newhall, Charles Edward, <i>e</i>	<i>13 Neptune St., Lynn</i>	
Norcross, Theodore White, <i>e</i>	<i>Medford</i>	Middle Hall, 10
Parker, Clara E., <i>a b</i>	<i>Middleboro</i>	et calf Hall, 11
Parker, Jessie Merrill, <i>a b</i>	<i>Uxbridge</i>	Metcalf Hall, 11
Paul, John Samuel, <i>e</i>	<i>York Beach, Me.</i>	East Hall, 23
Pearson, George Edward, <i>a b</i>	<i>Salem</i>	West Hall, 22
Perkins, Henry Farnsworth, <i>e</i>	<i>Haverhill</i>	47 College Ave.
Perkins, Oscar Houston, <i>a b</i>	<i>Danvers</i>	West Hall, 26
Pierce, Charles Tabor, <i>ph</i>	<i>E. Calais, Vt.</i>	West Hall, 15
Pierce, Chester Earl, <i>a b</i>	<i>Cambridge</i>	West Hall, 21
Plunkett, Thomas Francis, <i>a b</i>	<i>Norwich, Conn.</i>	West Hall, 14
Preston, Belle, <i>a b</i>	<i>51 Jaques St., Somerville</i>	
Quill, James John, <i>m p</i>	<i>Holyoke</i>	East Hall, 7
Richardson, Harry Elmer, <i>e</i>	<i>East Aurora, N. Y.</i>	West Hall, 22
Richardson, Harry Herbert, <i>a b</i>	<i>Cambridgeport</i>	East Hall, 5
Roberts, Harriet Norma, <i>a b</i>	<i>34 Court St., Medford</i>	
Russell, Clara Rebecca, <i>a b</i>	<i>182 Cambridge St., Winchester</i>	
Sander, Eleonore Henriette Thekla, <i>ab</i>	<i>115 Holworthy St., Cambridge</i>	
Sanders, Annie Louisa, <i>a b</i>	<i>Wayland</i>	43 Meacham St.
Schildge, Harry Adam, <i>e</i>	<i>So. Manchester, Ct.</i>	Δ T House
Scoboria, Clarence Preston, <i>a b</i>	<i>37 Sewell St., Somerville</i>	
Shaw, Frank Lester, <i>a b</i>	<i>Centre Sidney, Me.</i>	East Hall, 5
Sheldon, Charles Talbot, <i>e</i>	<i>North Billerica</i>	East Hall, 14
Smith, Irving Livingston, <i>e</i>	<i>58 Chatham St., Lynn</i>	
Spaulding, Rachel Josephine, <i>a b</i>	<i>Jaffrey, N. H.</i>	Metcalf Hall, 2
Standish, Clara May, <i>ph</i>	<i>Segreganset</i>	10 Lee St.
Stearns, Lillian, <i>a b</i>	<i>399 Highland Ave., W. Somerville</i>	
Stowell, Ralph Gilman, <i>e</i>	<i>Lynnfield</i>	East Hall, 24
Tenney, Ruth, <i>a b</i>	<i>Dorchester</i>	Metcalf Hall, 15
Trott, Edgar Payson, <i>e</i>	<i>86 Harvard Ave., West Medford</i>	
Tufts, Florence A., <i>a b</i>	<i>38 Clifton St., Malden</i>	
Tufts, Leland Everett, <i>e</i>	<i>15 Holyoke St., Lynn</i>	

Turner, Isabel Low, <i>a b</i>	<i>Bath, Me.</i>	35 Kidder Ave.
Walker, Florence Helen, <i>a b</i>	<i>26 Wallace St., W. Somerville,</i>	
Waterhouse, Melvin Howard, <i>sc</i>	<i>Westbrook, Me.</i>	West Hall 18
Watkins, Clarence Elmore <i>a b</i>	<i>So. Manchester, Ct.</i>	West Hall, 23
Watkins, Hazel Loraine, <i>ph</i>	<i>So. Manchester, Ct.</i>	Metcalf Hall, 14
Witham, Ernest C., <i>sc</i>	<i>Cumberland Mills, Me.</i>	
		Middle Hall, 8
Wood, Edward Holton, <i>e</i>	<i>Saco, Me.</i>	322 Boston Ave.

Special Students.

[In the following list the Roman numeral indicates the year of attendance, and the italicized department name is that of the student's major department.]

Allison, Irnie Emma, IV. <i>English.</i>	<i>Cherokee, Ia.</i>	Metcalf Hall, 5
Bartlett, Daisy Mae, II. <i>German.</i>	<i>47 Madison St., Somerville</i>	
Bowen, James Francis, III. <i>Political Science.</i>	<i>39 St. James Ave., Boston</i>	
Butler, James Percy, II. <i>Political Science.</i>	<i>40 Gilman St., Somerville</i>	
Butler, Josiah, IV. <i>Electrical Engineering.</i>	<i>Lowell</i>	West Hall, 28
Chapman, Charles Edward, I. <i>Economics.</i>	<i>Franklin Falls, N. H.</i>	East Hall 26
Chase, Adelaide Maria, I. <i>German.</i>	<i>West Medford</i>	
Chase, George Berry, I. <i>English.</i>	<i>Bethel, Vt.</i>	West Hall, 15
Coughlin, Frank William, V. <i>Mathematics.</i>	<i>55 Grove St., Lowell</i>	
Cushman, Arthur Wesley, II. <i>English.</i>	<i>Somerville</i>	Δ T Δ House
Danforth, Charles Warren, I. <i>Chemistry.</i>	<i>Tyngsboro</i>	East Hall, 27
Dolbear, Katherine Emma, I. <i>Biology.</i>	<i>Tufts College</i>	
Druley, Elmer Morey, II. <i>English.</i>	<i>Stafford, Conn.</i>	Δ T House
Ellis, Arthur Eugene, II. <i>Chemistry.</i>	<i>West Somerville</i>	West Hall, 7

Fay, Margaret, I. <i>French</i> .	<i>Tufts College</i>	
Fay, Thomas H., I. <i>Geology</i> .	<i>Rice St., No. Cambridge.</i>	
Fiske, Samuel Spaulding II. <i>Greek</i> .	<i>Franklin</i>	West Hall, 24
Flagg, Ford Tyler II. <i>Physics</i> .	<i>Richmond, Vt.</i>	West Hall, 16
Foster, Hiram Elisha, II. <i>English</i> .	<i>Derby Line, Vt.</i>	West Hall, 14
Goss, James Herbert, III. <i>Philosophy</i> .	<i>Marblehead</i>	West Hall, 2
Gudge, Benjamin Joseph, I. <i>History</i> .	<i>White City, Kan. 47 College Ave.</i>	
Hamilton, Henry Harmon, I. <i>Music</i> .	<i>Boston</i>	28 Professors Row
Hazelton, Willard Carpenter, IV. <i>Chemistry</i> .	<i>Stafford, Vt.</i>	West Hall, 24
Jackson, Gertrude Ada, II. <i>English</i> .	<i>86 Otis St., Medford</i>	
Jenks, Daniel Ashley, II. <i>English</i> .	<i>Holyoke</i>	Dean Hall, 9
Kidder, Martin Lattimer, I. <i>Mathematics</i> .	<i>Rochester, Vt.</i>	West Hall, 31
Leavitt, John Shepard, I. <i>Fine Arts</i> .	<i>51 Warren St., West Medford</i>	
Mackernan, William F. I. <i>English</i> .	<i>53 Pembroke St., Boston.</i>	
Maxwell, Harley Davidson, I. <i>Greek</i> .	<i>19 Prospect Hill Ave., Somerville</i>	
Mills, Nathaniel Child, II. <i>Electrical Engineering</i> .	<i>Douglass</i>	East Hall, 1
Peck, Willard Palmer, II. <i>English</i> .	<i>Bangor, Me.</i>	East Hall, 31
Peirce, Arthur Cyrus, III. <i>Engineering</i> .	<i>Athol</i>	East Hall, 16
Preble, Alfred Emerson, II. <i>Biology</i> .	<i>Wilmington</i>	East Hall, 9
Ray, Joseph Gordon, III. <i>Political Science</i> .	<i>Unionville</i>	Δ T Δ House

Richards, Bertha Francis, I. <i>Music</i> .	8 Melvin St., Somerville	
Shaw, Viola May, I. <i>Music</i> .	421 High St., W. Medford	
Stolworthy, Walter Hillary, I. <i>History</i> .	Franklin Falls, N. H. East Hall, 26	
Teague, Donald Spencer, I.	Caribou, Me.	East Hall, 14
Towle, Walter Volney, II. <i>Biology</i> .	New York City	Δ T Δ House
West, William Clough, IV. <i>Chemistry</i> .	Wallaston	Δ T Ω House
Williams, Arthur Frank Jr. I. <i>Chemistry</i> .	16 Berkeley St., Malden.	
Willis, Warwick Archibald, II. <i>Music</i> .	Waltham	
Woodruff, Joseph B. I. <i>Chemistry</i> .	Holyoke	Dean Hall, 9
Yates, Frank Brightman II. <i>English</i> .	Waterville, Me.	Z Ψ House

DIVINITY SCHOOL.

[The right-hand column contains the college residence of every student having such residence, the neighboring cities of Somerville and Medford being thus included. The middle column records the home address.]

Graduate Students.

Mousley, John Hardcastle,	Lyme, N. H.	Paige Hall, 10
Spear, Stanley Gates, B.D.	Hartland, Vt.	Paige Hall, 31

Senior Class.

Allen, Pliny Arunah, Jr.	Mattapoisett	Paige Hall, 13
Atkinson, Frederick William,	Winchester	Paige Hall, 27
Boivin, Bertram D.,	Fitchburg	Paige Hall, 22
Conden, William Chase, A.B., Buchtel College, 1896.	Concord, Mich.	Paige Hall, 31
Fuller, George Washington,	Bangor, Me.	Δ T House
Hunter, Stanley,	St. John, N. B.	
Moore, Willis Albert, A.B., 1898.	15 Curtis Ave., Somerville	
Myers, Charles N.,	Detroit, Mich.	Paige Hall, 12
Peardon, James Henry,	Revere	Paige Hall, 36
Smith, Albert George,	West Somerville	

Middle Class.

Cole, Fred Henry,	<i>Ludlow, Vt.</i>	Paige Hall, 32
Colson, George William,	<i>Salem</i>	Paige Hall, 6
Crowell, Arthur Freeman,	<i>Providence, R.I.</i>	Paige Hall, 26
A.B., Brown University, 1899.		
Hatch, Wallace,	<i>Roxbury</i>	Paige Hall, 24

Junior Class.

Andrews, Charles Masson,	<i>Newtonville</i>	Paige Hall, 18
B.S., 1900.		
Maxwell, Alfred Roscoe,	<i>Moore's Mills, W.B.</i>	Paige Hall, 1

TUFTS COLLEGE MEDICAL SCHOOL.

Senior Class.

Blaine, Walter Edward	<i>Fairhaven.</i>
Chakravarti, Satis C., F.A.	<i>Calcutta, India.</i>
Cheever, John Howard	<i>Portsmouth, N. H.</i>
Clarke, Genevieve, M.D.	<i>Cambridge.</i>
Coyne, Thomas Joseph, M.D.V.	<i>Charlestown.</i>
Dacey, Cornelius J.	<i>Boston.</i>
Dadmun, Eliza Josephine	<i>Boston.</i>
Duckering, Florence West	<i>Dorchester.</i>
Durgin, Edward Chase	<i>East Andover, N. H.</i>
Grandison, Wilfred George	<i>Charlestown.</i>
Hale, Robert Carleton	<i>Boston.</i>
Hayes, Blanche	<i>Groveton, N. H.</i>
Kirby, William Walter	<i>Providence, R. I.</i>
Ledwell, Richard J.	<i>Boston.</i>
Loewe, Leonard Joseph, M.D.V.	<i>Boston.</i>
Lovell, Harriett Jane	<i>Boston.</i>
Myers, Laura T.	<i>Boston.</i>
Nickerson, John Peter, B.S.	<i>West Harwich.</i>
Obear, Marion Helena	<i>Wellesley.</i>
Orr, Jane	<i>Boston.</i>
Otis, Susanna	<i>New Orleans, La.</i>
Parker, Albert Munro	<i>Boston.</i>
Pastene, Albert Angelo	<i>Boston.</i>
Rundlett, David Livingston	<i>Boston.</i>
Shea, Alfred Drake	<i>Cambridge.</i>
Stickney, Whitman Gibson	<i>Brownfield, Me.</i>
Thyng, Cora Hannah	<i>New Hampton, N. H.</i>
Tingley, Louisa Paine	<i>Providence, R. I.</i>

Whitman, William Dutcher *Malden.*
 Williams, Hubert Joseph *Boston.*

Third Year.

Adams, Eva Argene *Brunswick, Me.*
 Ash, Thomas Francis *Weymouth.*
 Aspray, Joseph *Sudbury.*
 Baker, Lily Owen *Boston.*
 Barnum, Charles James *Rochester, N. Y.*
 Blake, James Henry, PH.G. . . . *Fall River.*
 Blodgett, Harold P. . . . *Leominster.*
 Brooks, Edith May *Springfield.*
 Clarke, George Haven *Concord, N. H.*
 Clement, Merton Wallace *Boston.*
 Cogan, Thomas Francis *Lynn.*
 Curran, Simon Francis *Dorchester.*
 Currier, Richard Doe *Boston.*
 Dubois, Eoline Beatrice Church . . . *Edgewood, R. I.*
 Eells, Joseph O. . . . *Rockport, Me.*
 Eldridge, Harvey Loud *East Boston.*
 Ellis, Edward Keith *Hyde Park.*
 Finegan, Daniel Joseph *Gloucester.*
 Gallagher, John Vincent, A.B. . . . *Milford.*
 Gill, Mary Eva *Brookline.*
 Harriman, Cora Elizabeth *Framingham.*
 Hodgdon, Ralph Franklin *Gloucester.*
 Hurwitz, Abraham J. . . . *Boston.*
 Jackman, Alice May *Wakefield.*
 Konikow-Bucholz, Antoinette F., A.B. . *Boston.*
 Lawton, William Frazer *Charleston, S. C.*
 Lilienthal, Alice Estelle *Cambridge.*
 Lucas, Julian Dyer *Norwich, Conn.*
 Macdonald, Frederick Cornelius . . . *Boston.*
 Malone, Charles *Boston.*
 Malone, John, LL.B. . . . *Boston.*
 Massé, Mathilde M. . . . *Boston.*
 Mayell, Ernest Alfred *Watertown.*
 Michael, Helen Abbott *Boston.*
 Middleton, Willis Johnson *Belmont.*
 Morgner, Richard A., PH.G. . . . *Clinton.*
 Morse, Frank Wilmot *Sudbury.*
 Müller, Charles A. . . . *Roxbury.*
 Murphy, Frank Augustus *Taunton.*
 O'Brien, Joseph Jeremiah *Dorchester.*

Osborne, Ernest Sumner	<i>Rochester, N. H.</i>
Paine, Alonzo Kingman	<i>Hyannisport.</i>
Peabody, Anna Howe	<i>Danvers.</i>
Pease, Lewis Waite	<i>Weymouth.</i>
Peters, William Chute	<i>Boston.</i>
Plainfield, Mark Henry	<i>Boston.</i>
Price, Oscar Jay	<i>Milton.</i>
Ravich, Simon	<i>Boston.</i>
Rodrick, Albert F.	<i>Swampscott.</i>
Rose, William Milton	<i>Cambridge.</i>
Simmons, Hannah Coralynn	<i>Worcester.</i>
Smeltzer, James Finlay	<i>Boston.</i>
Stickney, Elizabeth M.	<i>Boston.</i>
Wyman, Arthur Edward	<i>Vassalboro, Me.</i>

Second Year.

Averell, Charles Wilson, A.M.	<i>Boston.</i>
Baker, Annie R.	<i>Boston.</i>
Baker, Ida Belle	<i>New Boston, N. H.</i>
Barrington, Edwin Russell	<i>Boston.</i>
Baskerville, John W.	<i>Boston.</i>
Bates, Edith Chaloner	<i>Cambridge.</i>
Bazin, A. Edmond	<i>Haverhill.</i>
Bowers, Elbern Taylor	<i>Lewiston, Me.</i>
Brown, Algernon Sydney	<i>Kingston, N. H.</i>
Butterfield, George K.	<i>Reeds Ferry, N. H.</i>
Caswell, Bertram Horace	<i>Wilmington.</i>
Ceconi, John A.	<i>Dorchester.</i>
Cody, Joseph John	<i>Dorchester.</i>
Conway, Francis Bernard	<i>Cambridge.</i>
Cotter, Maurice Edward	<i>Lawrence.</i>
Coulson, Richard	<i>Arlington Heights.</i>
Croswell, Mary Sibylla, A.B.	<i>Farmington Falls, Me.</i>
Daly, Jeremiah J.	<i>Andover.</i>
Davis, John Henry	<i>Georgetown.</i>
Derby, Fred W.	<i>Arlington.</i>
Derrick, George William	<i>Cambridgeport.</i>
Downing, Charles Harland	<i>Portsmouth, N. H.</i>
Faxon, Eudora Winifred	<i>Boston.</i>
Feeley, Charles Philip	<i>Cambridge.</i>
Ferguson, Creighton	<i>Cambridge.</i>
Fleming, Patrick Joseph	<i>Cambridge.</i>
Foster, Harry Ruffee	<i>Chelsea.</i>
Halsall, Mary Elizabeth	<i>East Boston.</i>

Haskins, Frank Eugene, PH.G.	. . .	<i>Brattleboro, Vt.</i>
Haviland, Walter Childs	. . .	<i>Holliston.</i>
Henry, James Edward Francis	. . .	<i>Providence, R. I.</i>
Herring, Will Mortimer	. . .	<i>North Attleboro.</i>
Holmes, Burton N.	. . .	<i>Waverly.</i>
Horne, Lester Wallace	. . .	<i>Norway, Me.</i>
Joyce, James Henry	. . .	<i>Salem.</i>
Keeler, William Basil,	. . .	<i>Roxbury.</i>
Kendall, George Ralph	. . .	<i>Brentwood, N. H.</i>
Kerr, Isabella Dickieson.	. . .	<i>Medford.</i>
Kerr, Jean Stuart	. . .	<i>St. Andrews, N. B.</i>
Lamb, Joseph E.	. . .	<i>Revere.</i>
Langworthy, Henry Glover	. . .	<i>Dubuque, Ia.</i>
Laws, Sophie G.	. . .	<i>Windsor, N. S.</i>
MacKay, Andrew J.	. . .	<i>Salem.</i>
Mahoney, Francis Aloysius	. . .	<i>Chelsea.</i>
Makechnie, Arthur North	. . .	<i>West Somerville.</i>
McElroy, Frank H.	. . .	<i>Providence, R. I.</i>
McNeil, Edmund J.	. . .	<i>Cambridge.</i>
Medler, Faith Curtis	. . .	<i>Rockford, Ill.</i>
Mitchell, Ethel S.	. . .	<i>Plymouth, N. H.</i>
Moran, Thomas, Jr.	. . .	<i>Biddeford, Me.</i>
Murphy, Edward M.	. . .	<i>Lowell.</i>
O'Brien, Loretta Joy	. . .	<i>Chelsea.</i>
O'Brien, William Francis	. . .	<i>Pawtucket, R. I.</i>
Parr, John	. . .	<i>Lawrence.</i>
Paull, Chester Alpheus	. . .	<i>Hollis, N. H.</i>
Pearman, William S.	. . .	<i>Boston.</i>
Pike, Sarah Poore	. . .	<i>Tewksbury.</i>
Plunkett, Harold Brabazon	. . .	<i>Lowell.</i>
Pohl, Carl Matthias	. . .	<i>Brockton.</i>
Reis, Frederick	. . .	<i>Boston.</i>
Rice, Florence Frances	. . .	<i>Boston.</i>
Ripley, William Littlefield	. . .	<i>Newton.</i>
Sanborn, Warren Bigelow	. . .	<i>Augusta, Me.</i>
Savage, J. John	. . .	<i>Somerville.</i>
Scanlan, Thomas J.	. . .	<i>East Boston.</i>
Sheehan, William Joseph	. . .	<i>South Boston.</i>
Swan, Horace Cheney	. . .	<i>Boston.</i>
Tangney, Charles William	. . .	<i>Rockland.</i>
Thurber, Stephen Francis	. . .	<i>Warren, R. I.</i>
Topaz, Anna	. . .	<i>Boston.</i>
Turner, George William	. . .	<i>Fall River.</i>
Varnum, Leavitt R. J.	. . .	<i>Lowell.</i>

Wheatley, Louis Frederick	<i>Meriden, Conn.</i>
Wernick, Benzoin G.	<i>Boston.</i>
Winslow, Guy M., PH.D.	<i>Auburndale.</i>
White, Lucy Nye	<i>Boston.</i>
Whittle, John Augustus	<i>Wakefield.</i>

Freshman Class.

Abbott, Harry Daniel	<i>Lynn.</i>
Ameno, Joseph Louis	<i>Boston.</i>
Anderson, John Hammond	<i>Quincy.</i>
Ballou, Ambrose Roche	<i>West Quincy.</i>
Benner, Gay Charles	<i>Medford.</i>
Bennett, William Henry	<i>North Raynham.</i>
Biron, Wilfred L.	<i>Manchester, N. H.</i>
Bloomberg, Simon	<i>Boston.</i>
Brady, Frank Robert	<i>Lowell.</i>
Bragdon, Guy Frank	<i>Boston.</i>
Buchold, Fred. George	<i>Lawrence.</i>
Buck, Charles E.	<i>Westminster, Vt.</i>
Buckley, Daniel Joseph	<i>Arlington.</i>
Callahan, Charles Durgin	<i>Cambridge.</i>
Carley, Margaret Elizabeth	<i>Winthrop.</i>
Chandler, Clarence Luther	<i>Townsend.</i>
Chase, James Smalley	<i>W. Duxbury.</i>
Chase, Lawrence Milton	<i>W. Duxbury.</i>
Clay, Waldo Hoit	<i>Laconia, N. H.</i>
Collins, Aubrey John	<i>Boston.</i>
Cooney, Marton J.	<i>Milford.</i>
Corey, Frederic Hall	<i>Roxbury.</i>
Cyr, Emile E.	<i>Lawrence.</i>
Dailey, Edward Joseph	<i>Somerville.</i>
Daily, Henry Jackson	<i>Boston.</i>
Daly, John Augustine	<i>Andover.</i>
Davis, Fred N.	<i>Everett.</i>
Dearborne, Luther Gould, Jr., A.B.	<i>Somerville.</i>
Derrick, Joseph Stephen	<i>Charlestown.</i>
Dodge, Arthur Howard	<i>Lonsdale, R. I.</i>
Donlan, James N.	<i>Natick.</i>
Donovan, John H.	<i>Lowell.</i>
Foster, Maude Ashley	<i>North Weymouth.</i>
Garry, John Joseph	<i>Methuen.</i>
Gettings, Thomas Lawrence	<i>Fall River.</i>
Gillette, George William	<i>Boston.</i>
Gray, Mason Carroll	<i>Boston.</i>

Hallisey, Joseph Edward	<i>Dorchester.</i>
Hardwick, Frederick Veazie	<i>Quincy.</i>
Harrington, Robert B.	<i>Somerville.</i>
Harrison, Henry	<i>Ware.</i>
Haskins, Ethel Grace	<i>Medfield.</i>
Hayes, Mary Agnes	<i>Keene, N. H.</i>
Higgins, George Vincent	<i>North Abington.</i>
Holt, Lucinda Mary-Belle, B.L.	<i>Portland, Me.</i>
Jacobs, Charles Michael	<i>Cambridge.</i>
Janes, Arthur Percy	<i>Boston.</i>
Kelly, John Joseph	<i>Dorchester.</i>
Kendricken, Joseph Thomas	<i>Boston.</i>
Kenney, Walter Clement	<i>Sharon, Vt.</i>
Kennison, Frederic Marshman	<i>Boston.</i>
Kingsbury, Walter W.	<i>Walpole, N. H.</i>
Langton, Joseph Francis	<i>Waltham.</i>
Levins, Nathan N.	<i>Boston.</i>
Lothrop, Walter C.	<i>Boston.</i>
Lowell, Charles Percival	<i>Newtonville.</i>
Lucas, Charles J. P.	<i>Cambridge.</i>
MacManus, Isabel	<i>Boston.</i>
Mayrand, Eugene	<i>Lowell.</i>
McCready, Henry Sumner	<i>Sharon.</i>
McGurn, William J.	<i>E. Bridgewater.</i>
McLaughlin, Edward J.	<i>East Boston.</i>
Meehan, Patrick Joseph	<i>Lowell.</i>
Murphy, Charles A.	<i>Boston.</i>
Murphy, Frederick P.	<i>Lowell.</i>
Murphy, Thomas William	<i>Lawrence.</i>
Myles, Leo Thomas	<i>Cambridge.</i>
Newman, Leon	<i>Boston.</i>
Newton, William Henry	<i>Waltham.</i>
Ober, Frank Roberts	<i>N. E. Harbor, Me.</i>
Parmenter, Frances	<i>Boston.</i>
Pinner, Charles Francis	<i>Boston.</i>
Pofcher, Elias Harris	<i>Boston.</i>
Prevett, Joseph	<i>Boston.</i>
Reilly, Thomas Ignatius	<i>Brockton.</i>
Robison, J. Collier	<i>Fillmore City, Utah.</i>
Robinson, Philip Eaton	<i>Medford.</i>
Rohrer, George H.	<i>Ashmont.</i>
Schmidt, Richard Deidrich	<i>Roxbury.</i>
Seymour, Horace Darling	<i>Warren, R. I.</i>
Shaw, Matthew Albert Neil	<i>Boston.</i>

Shay, Charles E.	<i>Roxbury.</i>
Skinner, Ralph Douglas	<i>Jamaica Plain.</i>
Smith, William Morgan	<i>Somerville.</i>
Stockbridge, Alberto Horatio	<i>Lynn.</i>
Stoodley, Harry Marr	<i>Somerville.</i>
Sturgis, Milton Gorham	<i>Lewiston.</i>
Sullivan, Cornelius A.	<i>Everett.</i>
Taylor, Horace Scales	<i>Wollaston.</i>
Taylor, Wilfard Isaac	<i>Crystal, Me.</i>
Tinkham, Oliver Goldsmith	<i>Weymouth.</i>
Toohey, Thomas Victor	<i>Roxbury.</i>
Tower, Freeman Augustus	<i>Sterling Jct.</i>
Wagner, Emma Juliet	<i>Boston.</i>
Walch, Joseph Francis	<i>Lawrence.</i>
Wallace, Annie M.	<i>West Gore, N. S.</i>
Warren, Thomas Francis	<i>Fall River.</i>
Warren, Lizzie Maude	<i>New Boston, N. H.</i>
Werner, Joseph Samuel	<i>Boston.</i>
Williams, Fred. Russell	<i>Worcester.</i>
Winslow Harold	<i>Navy Yard.</i>
Whiting, Spencer Draper	<i>Pawtucket, R. I.</i>
Woodill, Edith Estey	<i>Dorchester.</i>

Special Students.

Abbott, Eulalie M., M.D.	<i>Berwick, Me.</i>
Barnard, Herbert S.	<i>Exeter, N. H.</i>
Dean, Waldo Forest	<i>Cochituate.</i>
Dorman, Albert B., M.D.	<i>Winthrop.</i>
Moulton, Star Abner	<i>Boston.</i>
Quinn, Edwin A., D.D.S.	<i>Jamaica Plain.</i>
Wood, Sarah Frances	<i>Boston.</i>
Woodworth, John Dawson Roswell	<i>Jamaica Plain.</i>

TUFTS COLLEGE DENTAL SCHOOL.

Senior Class.

Aery, Thomas	<i>Marblehead.</i>
Baylies, Alfred	<i>Roxbury.</i>
Bradlee, Leonard Morse	<i>Milton.</i>
Bridge, Walter George	<i>Morrisville, Vt.</i>
Brown, Alfred Henry	<i>Boston.</i>
Church, Howard Wardwell	<i>Bristol, R. I.</i>
Corbett, Francis A., M.D.	<i>Newport, R. I.</i>

Coy, William Segar	<i>Westerly, R. I.</i>
Coyne, John William	<i>Sterling.</i>
Crawford, Thomas A. Jr.	<i>Boston.</i>
Cronan, Charles Augustus	<i>Milford.</i>
Curley, John Martin	<i>Boston.</i>
Davis, Wendell Frederick	<i>North Acton.</i>
Dean, Waldo F.	<i>Cochituate.</i>
De La Bruere, L. B.	<i>Quebec, Ca.</i>
Delahanty, Joseph Francis	<i>South Boston.</i>
De Wager, Emmanuel Aloysius	<i>Provincetown.</i>
Duncan, Corinne E.	<i>Rochester, Eng.</i>
Ford, Thomas A.	<i>Hopkinton.</i>
Gallup, Julius Clark, Jr.	<i>Bristol, R. I.</i>
Gorman, William H. J.	<i>Waltham.</i>
Green, Cecil Bradford	<i>Summerside, P. E. I.</i>
Hayden, Robert Ferguson	<i>Cambridge.</i>
Jepsen, Jeppe Christian	<i>Boston.</i>
Kelley, Peter F.	<i>Boston.</i>
Kenney, Blanche Marguerite	<i>Providence, R. I.</i>
Kenney, Maude A. E.	<i>Providence, R. I.</i>
Kenswil, Jean Eugene	<i>Paramaribo, S. A.</i>
Knight, Alfred Elmore	<i>Boston.</i>
Leith, George Washington	<i>Lowell.</i>
Leland, Henry	<i>Winchester.</i>
Luce, Murray T.	<i>Haverhill.</i>
Macneil, Ambrose	<i>Boston.</i>
Mason, Harry Clifford	<i>Ellsworth, Me.</i>
McElhinney, George Marshall	<i>Ottawa, Ca.</i>
McGourty, Edward Thomas	<i>Worcester.</i>
McTeer, Frederick Jacob	<i>Machias, Me.</i>
Merrill, William Louis	<i>Portland, Me.</i>
Neals, William Arthur	<i>Gorham, N. H.</i>
Nichols, Woodbury Franklin	<i>Bath, Me.</i>
Nute, Arthur Parker	<i>Dorchester.</i>
O'Donnell, John Edward Crowley	<i>Wilmington.</i>
Parker, Lester,	<i>Cambridge.</i>
Race, Clarence Adams	<i>East Boothbay, Me.</i>
Richmond, Claude Maurice	<i>Springfield, Vt.</i>
Roberts, Walter Nelson	<i>Vernon, Conn.</i>
Sherry, Frederick Thomas	<i>Dover, N. H.</i>
Smith, George Austin	<i>Lynn.</i>
Smith, James Francis	<i>Waltham.</i>
Thomson, Hugo Sherwood	<i>Canaan, Conn.</i>

Junior Class.

Bennett, Edward S.	Waltham.
Berks, Pliny Woodside	Boston.
Burke, Edward Vincent	Natick.
Burke, Foster Alvan McL.	Haverhill.
Bussey, Joseph Henry	East Boston.
Cail, James Walker	Harcourt, N. B.
Cann, Melvin Clayton	Roslindale.
Chipman, Fred Jackson	Portland, Me.
Carter, Farquhar Donaldson	Dorchester.
Clark, Arthur Hight	New Portland, Me.
Comstock, Austin Mark	W. Medford.
Cote, Omer Hervey	Woonsocket, R. I.
Consens, Frank Burton	Biddeford, Me.
Davis, Bertha Jewett	Lowell.
Dickerman, Ralph W.	Taunton.
Duffy, Edward Thomas	Hartford, Conn.
Fox, Edward T.	Clinton.
Garland, Samuel Ross	Somerville.
Grant, Giles Carpenter	Portland, Me.
Hackett, Ephraim Russell	Kingfield, Me.
Hayes, William James	Quincy.
Homan, Ernest W.	Saugus.
Keith, Ivan Shearman	Boylston.
King, Frederick E.	Chipman, N. B.
Lawton, James A.	Middletown, Conn.
Lincoln, Ernest F.	Leominster.
Locke, Maurice Edwin	Brockton.
Lockhart, James P.	Boston.
Macleod, Alexander Smith	Brookline.
Merrill, Edward Arthur	Winn, Me.
Moody, S. Irving	Harwich.
Moore, Horace Dwight	Lynn, Essex.
Perry, Stephen Driscoll	New Bedford.
Pierce, Lewis J.	Boston.
Pratt, Sumner Woodbury	Parsonsfield, Me.
Ramsdell, Charles Fred, Jr.	Dover, N. H.
Rund, Charles	Boston.
Russell, Frederick Paris	Shrewsbury, Vt.
Romanow, Mark	W. Somerville.
Sheldon, Daniel Frost	E. Highgate, Vt.
Small, Harry Preble	South Portland, Me.
Smart, Albert Lee	Lancaster.
Stetson, Joseph S., A.B.	Brunswick, Me.

Steward, Charles	<i>Boston.</i>
Taylor, Ernest B.	<i>Waltham.</i>
Tewksbury, George Arthur	<i>Morrisville, Vt.</i>
Tewksbury, Ralph Montague	<i>Woodstock, Vt.</i>
Thayer, John Phillip	<i>Keene, N. H.</i>
Tunncliffe, Edmund Harrison	<i>East Douglas.</i>
Wells, Rollin E.	<i>Lynn.</i>

Freshman Class.

Baker, Samuel Smith	<i>Ashland, N. H.</i>
Bachand, Joseph Denonville	<i>Coaticook, Ca.</i>
Brosnahan, James Leo	<i>Boston.</i>
Bence, Carrie I. Hough	<i>Fall River.</i>
Bowles, Boyd F.	<i>Waterville, N. S.</i>
Bridgman, Edward Payson	<i>Antigo, Wis.</i>
Byrnes, Henry F.	<i>Worcester.</i>
Cargill, William Lowell	<i>Liberty, Me.</i>
Carpenter, George William	<i>Rehoboth.</i>
Chisholm, Lester Dearborn	<i>Bridgewater.</i>
Cheney, Horace F.	<i>Roslindale.</i>
Cole, Charles R.	<i>Pawtucket, R. I.</i>
Desmond, Walter Patrick	<i>Medford.</i>
Doubleday, Arthur W.	<i>Springfield.</i>
Dixon, Joseph Reynolds	<i>Boston.</i>
Dooley, John Henry	<i>Roxbury.</i>
Driffin, Harry Alexander	<i>Leominster.</i>
Dow, George Luther	<i>Littleton, N. H.</i>
Dow, William Snow	<i>Arlington.</i>
Durgin, Oliver Kendall	<i>Saco, Me.</i>
Fall, Edward	<i>Newton.</i>
Farquhar, Robert Jr.	<i>Concord Jct.</i>
Farrington, Curtis W.	<i>Boston.</i>
Fraher, Michael Joseph	<i>South Boston.</i>
Gehrunge, Arthur F.	<i>N. Attleboro.</i>
Gilday, Frank J.	<i>Everett.</i>
Griffin, John Joseph	<i>Waltham.</i>
Gowen, Charles Edwin	<i>Dover, N. H.</i>
Gobie, William Allen	<i>Woodstock, Vt.</i>
Gokey, Harry M.	<i>Northfield, Vt.</i>
Gould, Arthur Richard	<i>Brockton.</i>
Harpin, Henry Taylor	<i>Windsor, Vt.</i>
Hatch, Theron	<i>Chelsea.</i>
Harris, Leslie Woodbury	<i>Natick.</i>
Hough, Grace Maude	<i>Fall River.</i>

Jamieson, Robert C.	<i>Boston.</i>
Kelley, Varney A.	<i>Boston.</i>
Kiley, Robert Delury	<i>Salem.</i>
Lanigan, Francis J.	<i>Calais, Me.</i>
Lawless, Lillian W.	<i>Bristol, R. I.</i>
Logwood, Burt Eugene	<i>Boston.</i>
Maguire, John Augustine	<i>Dorchester.</i>
Mahoney, George E.	<i>East Boston.</i>
Mason, Walter Courtlandt	<i>Gaysville, Vt.</i>
McCarthy, John Linus	<i>Brockton.</i>
McCarthy, William Francis	<i>Cambridge.</i>
McGlew, Charles K.	<i>Salem.</i>
McInnes, George Francis	<i>Cambridgeport.</i>
Merrill, Henry E.	<i>Somerville.</i>
Miles, Frank Bruce	<i>Upper Manguerville, N. B.</i>
Moderno, Louis	<i>Fall River.</i>
Moran, John James	<i>Woburn.</i>
Nugent, Maurice Leo	<i>Whitman.</i>
O'Brien, James, Jr.	<i>Ashland.</i>
O'Sullivan, Francis Aloysius	<i>Lowell.</i>
Petrie, Burton T.	<i>Fulton, N. Y.</i>
Pendleton, Irving Erskine	<i>Searsport, Me.</i>
Pettingill, Clarence Albert	<i>Hudson.</i>
Quinn, Francis X.	<i>Worcester.</i>
Reardon, Joseph E.	<i>Cambridge.</i>
Rooney, Francis X.	<i>Springfield.</i>
Sargent, Sidney Burt	<i>Searsport, Me.</i>
Shaw, George Maurice	<i>New York, N. Y.</i>
Shillington, James Henry	<i>Lynn.</i>
Shooshan, Harry M.	<i>Boston.</i>
Slattey, John T.	<i>South Boston.</i>
Smith, Henry Edwin	<i>Central Bedeque, P. E. I.</i>
Sproul, Frank	<i>Bristol, Me.</i>
Staples, Odber Welsley	<i>St. John, N. B.</i>
Thorburn, Howard Lester	<i>Boston.</i>
Tobin, Edward William	<i>Rockland.</i>
Wescott, Winfred Francis	<i>West Medford.</i>
Wightman, Morse	<i>Attleboro.</i>
Wiswell, Foster Smith	<i>Chelsea.</i>
Wren, John Joseph	<i>Jamaica Plain.</i>
Young, John Maurice	<i>Rockland.</i>

THE BROMFIELD-PEARSON SCHOOL.

[All Engineering Students of Tufts College attending courses in shopwork, and the following pursuing preparatory courses] :—

Adams, Benjamin Franklin	<i>East Aurora, N. Y.</i>	East Hall, 22
Doherty, Frederick Joseph Howard,	<i>35 Greenwich Park, Boston.</i>	
Eldridge, Wilbur Allen	<i>Wareham</i>	46 Quincy St.
Lowe, George Albert, Jr.	<i>Rockport</i>	East Hall, 24
Wood, Roy Eugene	<i>Saco, Me.</i>	East Hall, 5
Woodward, Frank Coy,	<i>E. Pepperell</i>	Middle Hall, 9

STUDENTS IN THE SUMMER SCHOOL.

[The studies pursued are represented by the following symbols: *c*, Chemistry; *m*, Mathematics; *e*, English. Tufts College is given as the address of those who are registered elsewhere as resident students.]

Armstrong, Roger Wellington, <i>c</i> ,	<i>Tufts College.</i>
Austin, William Willis, <i>c, m</i> ,	<i>Tufts College.</i>
Baker, Clair Lincoln, <i>c</i> ,	<i>Tufts College.</i>
Blaisdell, Albert Chester, <i>c</i> ,	<i>Tufts College.</i>
Bowen, James Francis, <i>c</i> ,	<i>Tufts College.</i>
Brown, Walter Campbell, <i>m</i> .	<i>Tufts College.</i>
Butler, James Percy, <i>c</i> ,	<i>Tufts College.</i>
Coombs, Alice S., <i>c</i> ,	<i>Waltham.</i>
Creeley, Oscar Slade, <i>c</i> ,	<i>Tufts College.</i>
Cushman, Arthur Wesley, <i>e</i> ,	<i>Tufts College.</i>
Dolbear, Samuel H., <i>c</i> ,	<i>Professors Row.</i>
Hazelton, Willard Carpenter, <i>c</i> ,	<i>Tufts College.</i>
Hersey, Arthur William, <i>c, m</i> ,	<i>Tufts College.</i>
Husted, Alfred Pomfret, <i>c, m</i> ,	<i>Tufts College.</i>
Lamb, Arthur Beckett, <i>c</i> ,	<i>Tufts College.</i>
Lambert, Edgar, <i>c</i> ,	<i>Medford Hillside.</i>
Low, William Henry, <i>c</i> ,	<i>Tufts College.</i>
Morse, Arthur Henry, <i>c</i> ,	<i>Tufts College.</i>
Murphy, Louis Sutcliffe, <i>c</i> ,	<i>Tufts College.</i>
Nason, Robert Edward, <i>e</i> ,	<i>Tufts College.</i>
Peirce, Arthur Cyrus, <i>m</i> ,	<i>Tufts College.</i>
Phipps, Ross Elliott, <i>m</i> ,	<i>Tufts College.</i>
Spofford, George Rawson, <i>m</i> ,	<i>Tufts College.</i>
Turner, Harry Chester, <i>e</i> ,	<i>Tufts College.</i>
Turner, William H., <i>c</i> .	<i>Medford Hillside.</i>
Wells, Leslie Custer, <i>c</i> ,	<i>Tufts College.</i>
West, William Clough, <i>c</i> ,	<i>Tufts College.</i>
Williams, Arthur F., <i>c</i> ,	<i>Malden.</i>

Summary.

CORPS OF INSTRUCTION.

Emeritus	2	
Professors	44	
Assistant Professors	10	
Instructors	38	
Lecturers	13	
Assistants	11	
Demonstrators	2	
Total engaged in work of instruction	—	120

STUDENTS.

COLLEGE OF LETTERS:

Graduate	5	
Senior	50	
Junior	55	
Sophomore	42	
Freshman	106	
Special	44	
	—	302

DIVINITY SCHOOL:

Graduate	2	
Senior	10	
Middle	4	
Junior	2	
	—	18

MEDICAL SCHOOL:

Senior	30	
Third Year	54	
Second Year	77	
Freshman	103	
Special	8	
	—	272

DENTAL SCHOOL:

Senior	50	
Junior	50	
Freshman	76	
	—	176

SUMMER SCHOOLS 28

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Total number of students	802
Names appearing twice	22

DEGREES AND HONORS
1899-1900

Forty-Fourth Annual Commencement.

June 20, 1900.

DEGREES CONFERRED.

HONORARY.

Doctors of Laws.

WALTER CHANNING.
JOHN L. HILDRETH.

Literary Doctors.

CHARLES ERNEST FAY.
ANNA BOYNTON THOMPSON.
LEGRAND POWERS.
GEORGE CURTIS WALDO.

Master of Arts.

GODFREY MORSE.

Doctor of Science.

FREDERICK STARK PEARSON.

Doctors of Divinity.

GEORGE MILFORD HARMON.
WILLIAM GEORGE TOUSEY.

IN COURSE.

Bachelors of Arts.

MADGE AGNES ANTHONY (with Final Honors in Greek, and
Honorable Mention in German).
MARTHA LOUISE ATKINSON (with Honorable Mention in
German and English).
ELMER WALTER BARRON.
LOUIS RAYMOND BROWN.
CARRIE LOIS CLARK (with Honorable Mention in English).
JOHN PUTNAM CLARK.

AMY LOVETT COLE (with Honorable Mention in French).
 ORA GEORGE DANIELS.
 ETHEL DAVIS.
 LUTHER GOULD DEARBORN, JR.
 MABEL WILLARD DOTEN (with Final Honors in English and
 Honorable Mention in History).
 ETHEL LINCOLN FAY (with Final Honors in German and
 Honorable Mention in French).
 ETHEL BRYANT HARMON (with Final Honors in Greek and
 Honorable Mention in German and French).
 LESTER STANLEY HART.
 ADELLA RICHARDS HILL (with Final Honors in German and
 Honorable Mention in French and Music).
 ETHEL PARKER HUNTING (with Final Honors in German and
 Honorable Mention in French and English).
 MARY ANNA INGALLS.
 ARTHUR BECKETT LAMB (with Final Honors in Biology).
 ROLAND MANCHESTER LAMB.
 ELIZABETH CALDWELL LANE (with Final Honors in Mathe-
 matics and Greek).
 ANNA IMELDA RYAN (with Final Honors in Latin and Hon-
 orable Mention in Greek).
 MARGARET MAUDE SHIPMAN (with Final Honors in Ger-
 man).
 ALICE HOWARD SPAULDING (with Final Honors in French
 and Honorable Mention in English, German, and Music).
 ERNEST LEONARD SPAULDING (with Final Honors in Greek
 and Honorable Mention in German).
 HARRIET MARIA SPOONER (with Honorable Mention in
 Greek).
 CARL CLIFTON TARBOX.
 IRVING BLOOM THOMAS.
 RUTH TOUSEY (with Final Honors in English and Honorable
 Mention in Philosophy).
 HARRY OLIVER WATERMAN.
 ABBOTT REED WEBBER.
 ABBIE PARK WHITE.

Bachelors of Science in Civil Engineering.

JOSEPH BRADFORD BROOKS.
 CHARLES ERNEST BURTON.
 LEROY BERNARD CHRISTIAN.
 CHARLES DARROW KIRKPATRICK.
 WILLIAM LORENZO LOCKE.

JOHN WILLIAM RABY.
CHARLES HENRY RESTALL.

Bachelors of Science in Electrical Engineering.

HENRI FRANCIS CHADWICK (with Final Honors in Electricity).
LEWIS HENRY HAYNES.
GEORGE RUTHERFORD KEMPTON.
ERNEST MILLS LOVELL.
FRANCIS SOLOMON ROOT (with Final Honors in Electricity).
ROBERT EDWARD WAGNER (with Final Honors in Electricity).

Bachelors of Science in General Science.

CLARENCE ALBERT PETTENGILL.
CHARLES MASSON ANDREWS.

Bachelor of Science in Chemistry.

WALLACE THOMPSON CONN.

Bachelors of Divinity.

JOHNSON WASHINGTON HILL.
LESTER LOTHROP LEWIS.
STANLEY GATES SPEAR.

Doctors of Medicine.

PHILIP CHALLIS BARTLETT.
CELIA JUNE BOLLES.
ALICE MAUD MARY CHESLEY.
ISADOR HARRY CORIAT.
ADELAIDE OLGA CUSHING.
FREDERICK LUKE DOUCETT.
FRANK HERBERT DUNBAR.
ROBERT WILLIAM FORSTER.
HARRIET RAWSON GOODRICH.
ALICE MAUD GRAY.
EVA KEITH GREENE.
HOWARD HAMBLÉN.
CHARLES WILLIAM HANNAFORD.
WENTWORTH LARRABEE HAYES.
WINFRED LEWIS HOWE.
GEORGE FREDERICK HUGHES, JR.
AMANDA ELIZABETH INGRAHAM.

WARREN WILLIAM JOURNEY.
 ADELAIDE ROSALIND KIRSHNER.
 MARION LEWIS.
 CARL AUGUSTUS LINDQUIST.
 HANNAH LOWELL.
 JOHN FRANCIS LOWNEY.
 NORMAN THOMAS McLEAN.
 JOHN SCOTT McLEOD.
 JOHN JAMES McNAMARA.
 MARY INA MILES.
 JENNIE JUNE PATCH.
 WINFRED CARLE PIKE.
 MAY CATHERINE SCHROEDER.
 CHARLOTTE DODD STEWARTSON.
 EDNA HELEN WEIL.
 CHARLES EDWARD WILLIAMS.

Doctors of Dental Medicine.

JOHN ROBBINS BAXTER.
 FRANK ADELBERT BESSE.
 EDWARD VALENTINE BULGER.
 JOHN SWIFT BURBANK.
 THOMAS HENRY CALLAGHAN.
 WALTER EDWIN CHASE.
 HORACE CORYELL CHESTER.
 EDWIN COLLIER.
 JOHN JOSEPH CREED.
 CHARLES E. DERBY.
 NEWTON ALLEN DEWITT.
 FRANCIS HERMAN DICKIE.
 ERVIN A. EASTMAN.
 EDSON KENDALL FISH.
 SELDEN H. FREEZE.
 CHARLES IRVING GOULD.
 MICHAEL GEORGE HACKETT.
 JOHN ASA HARDIE.
 FRANK AUGUSTUS HAYDEN.
 FREDERICK ERNEST JEFFREY.
 MATTHEW J. KELLEY.
 A. LINCOLN LANE.
 JOSEPH LALIBERTY.
 CLAYTON RAYMOND MARSTIN.
 EDGAR HOWARD MINOT.
 JOHN HENRY McDONALD.

AUGUSTINE EDWARD McDONOUGH.
J. HARVEY MCGAHAN.
THOMAS JOSEPH NUGENT.
EUGENE FRANCIS O'NEILL.
MICHAEL JOSEPH O'REILLY.
CLARK HARRISON OTIS.
MAXWELL POWERS.
MARIE MARGUERITA PURDIE.
STEPHEN GALWAY RITCHIE.
CARLETON MORSE SAVILLE.
HARMON BOUTELL SOULE.
OSCAR MARTIN SPRINGER.
FREDERICK GEORGE SANTOM.
MARTIN CHARLES TRACY.
IRVING J. WETHERBEE.
CHARLES HENRY WEBB.
CHARLES HALE WELLMAN.
WINTHROP COLBATH WHITTEMORE.

Masters of Arts.

MADGE AGNES ANTHONY.
JOHN PUTNAM CLARK.
SARAH EMMA KEITH.
ARTHUR BECKETT LAMB.
KATE H. PATTANGALL.
MARGARET MAUDE SHIPMAN.

Masters of Science.

LEWIS HENRY HAYNES.
GEORGE FISHER MORTON.

AWARDS OF PRIZES, 1899-1900.

Goddard Prize in Latin.

MARY ALICE RINES.

Goddard Prize in Mathematics.

EDITH LINWOOD BUSH.

Greenwood Prize Scholarship in Oratory.

KINGSBURY FOSTER.

Wendell Phillips Memorial Scholarship.

For 1898-1900.

LAWRENCE HOUGHTON PARKER.

For 1900-1902.

FORREST SUMNER LUNT.

Rhetorical Prizes.

First Division.

THORNTON ANTHONY MILLS (1).

RUTH PAUL CAPEN (2).

Second Division.

ARTHUR MAYNARD BOUTELLE (1).

FORREST SUMNER LUNT (2).

Third Division.

KINGSBERRY FOSTER (1).

FRANK LESLIE HAYFORD (2).

Entrance Examination Prize, 1900

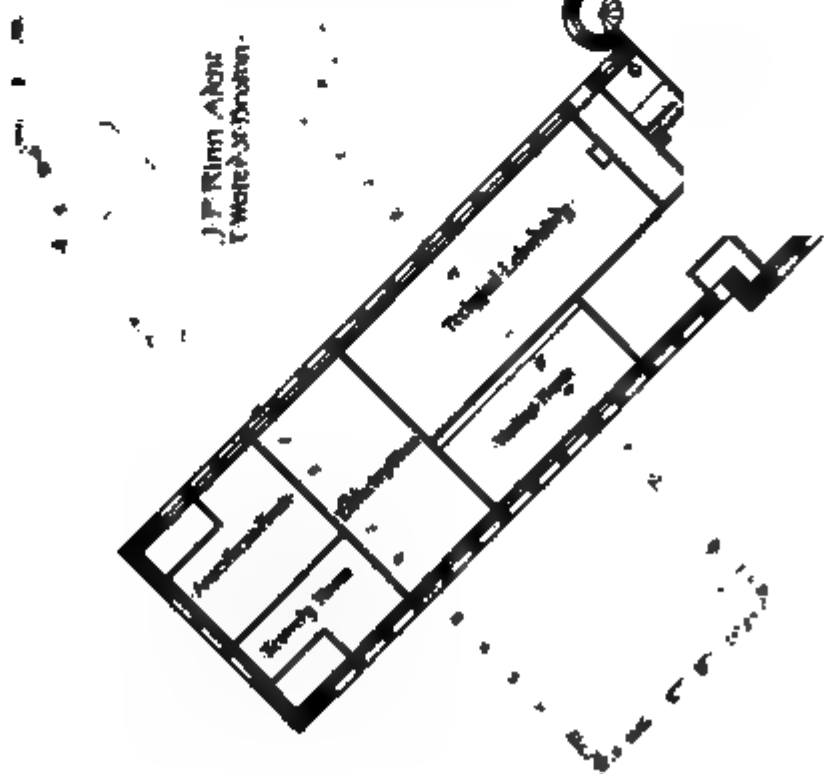
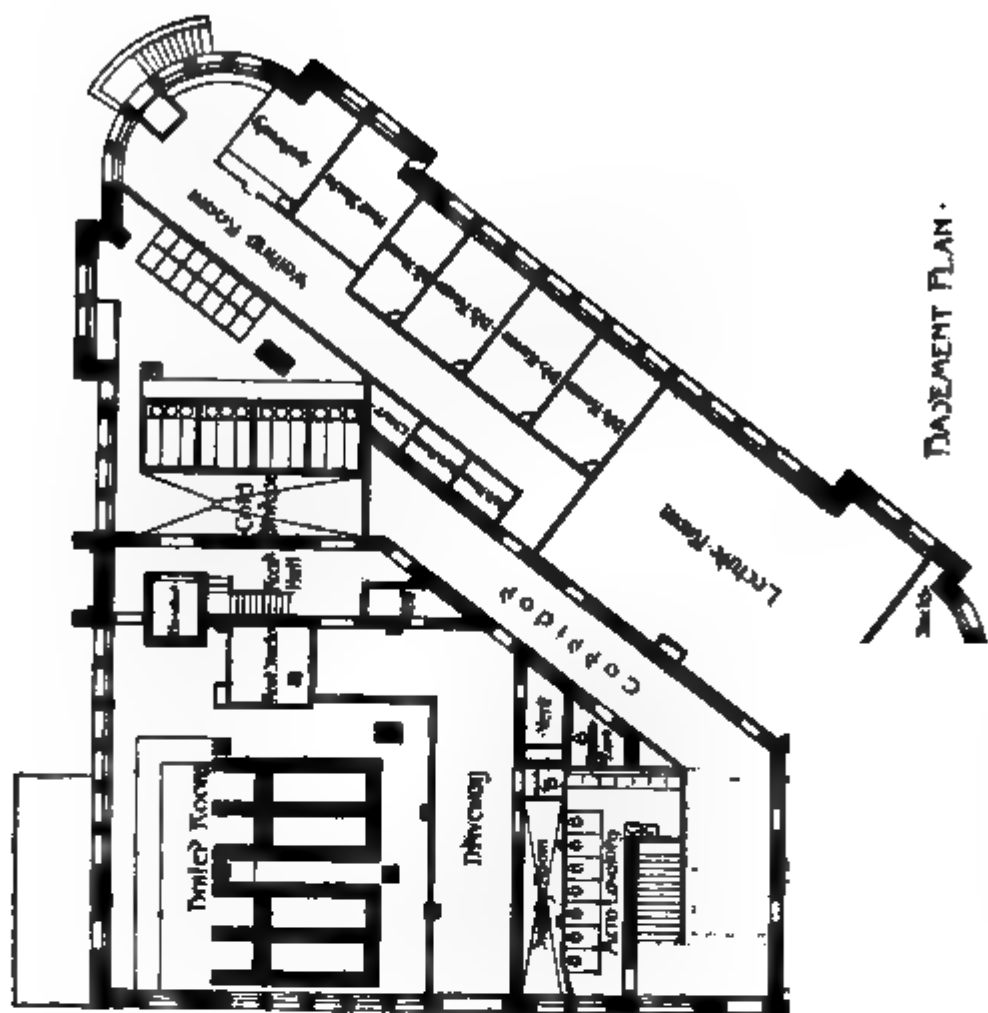
CLARENCE PRESTON SCOBORIA.

Greenwood Prizes in Oratory in the Divinity School.

WILLIS ALBERT MOORE.

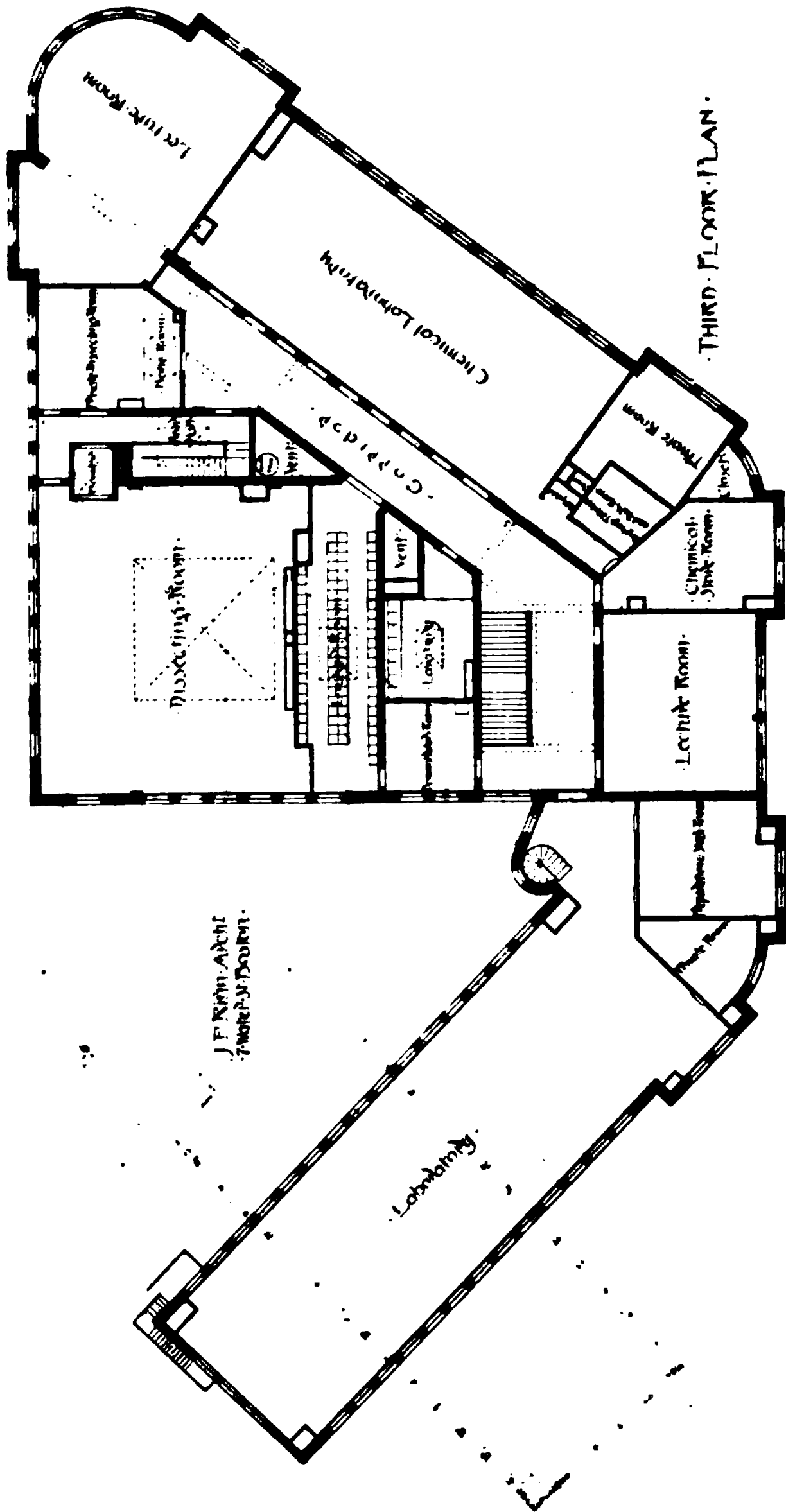
STANLEY GATES SPEAR.

GEORGE WASHINGTON FULLER.



J. P. Kinn Above
 & Water & Sewer





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CATALOGUE
OF
TUFTS COLLEGE

1901-1902

TUFTS COLLEGE PRESS
—
H. W. WHITTEMORE & CO.
TUFTS COLLEGE, MASS.

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Calendar.

1901.

- SEPT. 19. College year begins (all departments except the Medical School), Thursday morning.
- SEPT. 21. Regular college exercises begin.
- SEPT. 22. Russell Lecture, Sunday, 7.30 P.M.
- NOV. 27. Thanksgiving recess begins, Wednesday at 1 P.M.
- DEC. 1. Thanksgiving recess ends, Sunday evening.
- DEC. 4. Announcement of Commencement Parts and Prizes.
- DEC. 18. Christmas recess begins, Wednesday evening.

1902.

- JAN. 1. Christmas recess ends, Wednesday evening.
- FEB. 8. End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
- FEB. 10. Second half-year begins, Monday.
- FEB. 22. Washington's Birthday. College exercises suspended.
- APRIL 2. Spring recess begins, Wednesday evening.
- APRIL 9. Spring recess ends, Wednesday evening.
- APRIL 19. Patriots' Day. College exercises suspended.
- MAY 16. Prize Reading in the College of Letters, Friday, 3 P.M.
- MAY 27. Prize Reading in the Divinity School, Tuesday, 3 P.M.
- MAY 30. Memorial Day. College exercises suspended.
- JUNE 9. Entrance examinations at the Dental School, Monday.
- JUNE 13. Class Day, Friday.
- JUNE 15. Baccalaureate Sermon, Sunday, 4.30 P. M.
- JUNE 18. Forty-sixth Annual Commencement, Wednesday.

First Examination for Admission to the College of Letters.

- JUNE 19. Algebra, 9 to 10.30 A.M.
 English, 10.30 A.M. to 12.30 P.M.
 Plane Geometry, 2 to 4 P.M.
 Physics, 4 to 5 P.M.
 Drawing, 4 to 6 P.M.
- JUNE 20. Elementary and Advanced Latin, 9 to 12 A.M.
 Advanced Mathematics, 9 to 11 A.M.
 Natural History (two subjects), 11 A.M. to 1 P.M.
 History, 2 to 4 P.M.
 Chemistry, 4 to 5 P.M.

- JUNE 21.** Elementary and Advanced Greek, 9 to 12 A.M.
Intermediate and Advanced German and French, 9 to 11 A. M.
Elementary German and French, 11 A.M. to 12.30 P.M.
- JUNE 20 to SEPT. 15.** Session of the Harpswell Laboratory.
- JULY 7 to AUGUST 16.** Session of the Summer School of Chemistry.
-

Second Examination for Admission to the College of Letters.

- SEPT. 15.** Elementary and Advanced Greek, 9 to 12 A.M.
Intermediate and Advanced German and French, 2.30 to 5 P.M.
Elementary German and French, 1 to 2.30 P.M.
- SEPT. 16.** Algebra, 9 to 10.30 A.M.
English, 10.30 A.M to 12.30 P.M.
Plane Geometry, 2 to 4 P.M.
Physics, 4 to 5 P.M.
Drawing, 4 to 6 P.M.
- SEPT. 17.** Elementary and Advanced Latin, 9 to 12 A.M.
Advanced Mathematics, 9 to 11 A.M.
Natural History (two subjects), 11 A.M. to 1 P. M.
History, 2 to 4 P.M.
Chemistry, 4 to 5 P.M.
-

- SEPT. 17.** Examination for Admission to the Divinity School, in Miner Hall, beginning at 9 A. M.
- SEPT. 18.** College year begins, Thursday morning.
Registration of all students at the Secretary's office.
Major departments and plans of study for the first half-year must be reported before noon of this day.
- SEPT. 20.** Regular college exercises begin.
- SEPT. 21.** Russell Lecture, Sunday.
- SEPT. 22.** Week of entrance examinations begins at the Medical School.
- SEPT. 30.** Entrance examinations at the Dental School, Tuesday.
- OCT. 1.** Lectures begin in the Medical and Dental Schools, Wednesday.
- Nov. 26.** Thanksgiving recess begins, Wednesday at 1 P. M.
- Nov. 30.** Thanksgiving recess ends, Sunday evening.
-

TUFTS COLLEGE is a railway station four miles from Boston, on the Southern division of the Boston and Maine Railroad. The post-office address is—TUFTS COLLEGE, MASS.

Historical Sketch.

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; and the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard

was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

“No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain.”

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—Students were first formally admitted in 1855. The only building at that time was the main College building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first President of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering Courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and in 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in

1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one

important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened for the accommodation of women students Metcalf Hall, the gift of Mr. Albert Metcalf of Newton. The Start House now offers home-like rooms for women students, and the Allen House provides opportunity for a few self-boarders.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was

succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel, and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting

of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary, and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when, in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal; provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS.

SECTION I. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A.B., S.B., or Ph.B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committee, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

**THE ADMINISTRATION OF
THE COLLEGE**

The Trustees.

President.

HENRY B. METCALF.

Vice-President.

HOSEA M. KNOWLTON.

Secretary.

HENRY W. RUGG, Providence, R. I.

Treasurer.

NEWTON TALBOT, 30 West Street, Boston.

Executive Committee.

FREDERICK W. HAMILTON, *Chairman*.

ELMER H. CAPEN.

THOMAS H. ARMSTRONG.

LORRIN L. DAME.

HENRY D. WILLIAMS.

BYRON GROCE.

SUMNER ROBINSON.

ALBERT METCALF.

HENRY W. RUGG.

Committee on Finance.

WILLIAM H. SHERMAN, *Chairman*.

WALTER E. PARKER.

ARTHUR E. MASON.

WILLIAM W. SPAULDING.

J. FRANK WELLINGTON.

Trustees.

TIMOTHY T. SAWYER,

Boston.

NEWTON TALBOT, A.M.,

Boston.

ELMER H. CAPEN, A.M., D.D., LL.D.,

Somerville.

CHARLES S. FOBES, A.M.,

Portland, Me.

HOSEA M. KNOWLTON, A.B., LL.D.,

New Bedford.

THOMAS H. ARMSTRONG, A.M.,

Waltham.

HENRY W. RUGG, D.D.,

Providence, R. I.

J. COLEMAN ADAMS, A.M., D.D.,

Hartford, Conn.

BYRON GROCE, A.M.,

Boston.

ARTHUR E. DENISON, A.B.,

Cambridge.

HENRY D. WILLIAMS, A.M.,

Boston.

WILLIAM OSCAR CORNELL,

Providence, R. I.

HOSEA W. PARKER, A. M.,

Claremont, N. H.

WALTER E. PARKER,

Lawrence.

HENRY B. METCALF, A.M.,

Pawtucket, R. I.

WILLIAM W. SPAULDING, A.B.,	Haverhill.
DAVID CUMMINGS,	Somerville.
FREDERICK S. PEARSON, A.M.M., S.D.,	New York, N. Y.
CHARLES E. MORRISON,	Boston.
SUMNER ROBINSON, A.M., LL.B.,	Newton.
WILLIAM H. SHERMAN,	Boston.
ALBERT METCALF,	Newton.
JOHN W. HAMMOND, A.B., LL.D.,	Cambridge.
FREDERICK W. HAMILTON, A.M., D.D.,	Boston.
LORRIN L. DAME, A.M., S.D.,	Medford.
J. FRANK WELLINGTON,	Somerville.
WILLIAM E. GIBBS, A.B., D.D.,	Lawrence.
ARTHUR E. MASON,	Boston.
ROBERT R. ANDREWS, D.D.S.,	Cambridge.

The Overseers.

President.

WALTER P. BECKWITH, A.M., Ph.D.

Secretary.

CHARLES W. PARMENTER, A.M., Ph.D.

Term expires in 1902.

EDWARD H. CLEMENT, A.M.

SELDEN CONNOR, LL.D.

ARTHUR W. PEIRCE, Litt.D.

SAMUEL W. MENDUM, A.M.

Term expires in 1903.

CHARLES H. EATON, A.M., D.D.

EDWIN GINN, A. M.

FRANK M. HAWES, A.M.

FRANK T. DANIELS, A. M. B.

Term expires in 1904.

WILLIAM B. FRENCH, A.B.

FRANCIS B. HARRINGTON, A.B., M.D.

FRANK O. MELCHER, C.E.

CHARLES W. PARMENTER, Ph.D.

Term expires in 1905.

WALTER P. BECKWITH, A.M., Ph.D.

HENRY BLANCHARD, A.M., D.D.

WILLIAM D. T. TREFRY, A.B.

MINTON WARREN, Ph.D., LL.D.

BOARDS OF VISITORS.

[Appointed by the Overseers.]

To the College of Letters.

FRANK O. MELCHER, C.E.

EDWARD H. CLEMENT, A.M.

WILLIAM B. FRENCH, A.B.

WALTER H. SMALL, A.M.

ARTHUR E. PETERSON, A.M.

To the Divinity School.

ARTHUR W. PEIRCE, Litt.D.

FRANK M. HAWES, A.M.

SAMUEL W. MENDUM, A.M.

DWIGHT M. HODGE, D.D.

FREDERICK W. PERKINS, B.D., A.M.

To the Medical School.

CHARLES W. PARMENTER, A.M., Ph.D.

FRANK T. DANIELS, A.M.B.

ELMON A. BURNHAM, A.B., M.D.

BYRON L. DWINELL, A.B., M.D.

HORACE P. MACKECHNIE, A.B., M.D.

To the Dental School.

WILLIAM D. T. TREFRY, A.B.

WALTER P. BECKWITH, A.M., Ph.D.

SELDEN CONNOR, LL.D.

HENRY S. DRAPER, D.D.S.

EDWIN E. DAVIS, A.B., D.D.S.

Officers of Instruction and Government.*

- ELMER H. CAPEN, A.M., D.D., LL.D., 8 Professors Row.
PRESIDENT, and Professor of Moral Philosophy and Political Economy.
- CHARLES H. LEONARD, A.M., D.D., 120 Packard Ave.
Goddard Professor of Homiletics and Pastoral Theology, and Dean of the Divinity School.
- JEROME SCHNEIDER, PH.D., 28 Professors Row.
Professor of Greek.
- EDWIN C. BOLLES, PH.D., D.D., College Avenue.
Dickson Professor of English and American History.
- BENJAMIN G. BROWN, A.M., 38 Professors Row.
Walker Professor of Mathematics.
- WILLIAM R. SHIPMAN, A.M., D.D., LL.D., Talbot Avenue.
Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of the Faculty of the College of Letters.
- SAMUEL G. WEBBER, A.B., M.D., 419 Boylston St., Boston.
Professor of Neurology.
- CHARLES D. BRAY, C.E., A.M., 98 Professors Row.
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- JOHN L. HILDRETH, A.B., M.D., LL.D., 14 Garden St.,
Professor of Clinical Medicine, Emeritus. Cambridge.
- HENRY W. DUDLEY, M.D., Abington.
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine.
- CHARLES P. THAYER, A.M., M.D., Tufts College Medical
Professor of General, Descriptive, School.
and Applied Anatomy, and Secretary of the Medical and Dental Schools.
- AMOS E. DOLBEAR, M.E., PH.D., 134 Professors Row.
Professor of Physics and Astronomy.
- GEORGE M. HARMON, A.M., D.D., 114 Curtis Street.
Professor of Biblical Theology.
- ERNEST W. CUSHING, A.B., M.D., LL.D., 168 Newbury St.,
Professor of Abdominal Surgery and Gynaecology. Boston.
- CHARLES E. FAY, A.M., LITT.D., 92 Professors Row.
Wade Professor of Modern Languages.

* The members of the Faculty, with the exception of the President, are arranged in this list in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course.

- WILLIAM G. TOUSEY, A.M., D.D., 106 Professors Row.
Professor of Ethics and the Philosophy of Theism.
- EDWARD O. OTIS, M.D., 381 Beacon St., Boston.
Professor of Pulmonary Diseases and Climatology.
- GEORGE T. KNIGHT, A.M., D.D., 114 Professors Row.
*Packard Professor of Christian Theology, and Secretary
of the Divinity School.*
- HENRY J. BARNES, M.D., 429 Beacon Street, Boston.
Professor of Hygiene.
- WALTER CHANNING, M.D., LL.D., Brookline.
Professor of Mental Diseases.
- CHARLES A. PITKIN, A.M., PH.D., South Braintree.
Professor of General Chemistry.
- WARREN S. WOODBRIDGE, A.M., B.D., 12 Pearl St., Medford.
Woodbridge Professor of Applied Christianity.
- HAROLD WILLIAMS, A.B., M.D., 528 Beacon St., Boston.
*Professor of the Principles and Practice of Medicine, and
Dean of the Medical and Dental Schools.*
-
- Pearson Professor of Geology and Mineralogy.*
- J. STERLING KINGSLEY, S.D., 128 Professors Row.
Professor of Biology.
- WILLIAM L. HOOPER, A.M., PH.D., 124 Professors Row.
Professor of Electrical Engineering.
- GARDNER W. ALLEN, A.B., M.D., Warren Chambers,
Instructor in Genito-Urinary Surgery. Boylston St., Boston.
- ARTHUR MICHAEL, A.M., PH.D.,* 44 Mt. Vernon Street, Boston.
Professor of Chemistry.
- FREDERIC M. BRIGGS, A.B., M.D., 31 Massachusetts Ave.,
Professor of Clinical Surgery. Boston.
- FRANK G. WHEATLEY, A.M., M.D., North Abington.
Professor of Materia Medica and Therapeutics.
- HOWARD S. DEARING, A.M., M.D., 607 Tremont St., Boston.
Assistant Professor of Clinical Medicine.
- GARDNER C. ANTHONY, A.M., 14 Professors Row.
*Professor of Technical Drawing, and Dean of the Depart-
ment of Engineering and of the Bromfield-Pearson
School.*
- HENRY B. CHANDLER, M.D., 34½ Beacon St., Boston.
Professor of Ophthalmology.
- HERBERT WARREN WHITE, M.D., 151 Humboldt Ave., Roxbury.
Assistant Professor of Theory and Practice of Medicine.

*Absent on leave.

- EDWARD L. TWOMBLY, A.B., M.D., 406 Massachusetts Ave.,
Instructor in Clinical Medicine. Boston.
- GEORGE H. WASHBURN, A.B., M.D., 377 Marlborough St.,
Professor of Obstetrics. Boston.
- BRYON H. STROUT, D.D.S., Taunton.
Lecturer on Operative Technics and Instructor in Anaesthesia.
- ARTHUR E. AUSTIN, A.B., M.D., Tufts College Medical School.
Professor of Medical Chemistry and Toxicology.
- FREDERIC L. JACK, M.D., 215 Beacon St., Boston.
Professor of Otology.
- EDWARD W. BRANIGAN, D.D.S., 2 Commonwealth Avenue,
Professor of Clinical Dentistry. Boston.
- JOSEPH KING KNIGHT, D.D.S., Hyde Park.
Professor of Prosthodontia.
- HORACE D. ARNOLD, A.B., M.D., 188 Warren St., Roxbury.
Professor of Clinical Medicine.
- HERBERT E. CUSHMAN, B.D., A.M., PH.D., 28 Professors Row.
Professor of Philosophy.
- DAVID L. MAULSBY, A.M., 80 Curtis Street.
Professor of English Literature and Oratory.
- LEO R. LEWIS, A.M., 20 Professors Row.
Professor of the History and Theory of Music.
- FRANK W. DURKEE, A.M., 38 Professors Row.
Professor of Inorganic Chemistry.
- E. CHANNING STOWELL, A.B., M.D., 9 Massachusetts Avenue,
Assistant Professor of Children's Diseases. Boston.
- FREDERICK M. HEMENWAY, D.D.S., Hotel Pelham, Boston.
Professor of Prosthetic Dentistry.
- GEORGE A. WEBSTER, M. D., 419 Boylston Street, Boston.
Instructor in Otology.
- JAMES S. HOWE, M.D., 15 Charles St., Boston.
Assistant Professor of Dermatology.
- FRANK BERRY SANBORN, C.E., M.S., 17 Sacramento Street,
Assistant Professor of Civil Engineering. Cambridge.
- GEORGE A. BATES, D.D.S., Auburndale.
Professor of Dental Histology.
- WARREN F. GAY, A.B., M.D., 416 Marlborough Street, Boston.
Instructor in Surgery and Assistant in Surgical Pathology.
- GEORGE V. N. DEARBORN, A.M., M.D., PH.D.,
 38 St. Botolph St., Boston.
Assistant Professor of Physiology.
- JOHN C. MUNRO, A.B., M.D., 173 Beacon Street, Boston.
Professor of Surgery.

- JOSEPH C. STEDMAN, M.D., Warren Chambers,
Instructor in Rectal Diseases. Boylston St., Boston.
- GEORGE W. KAAH, M.D., Hotel Oxford, Boston.
Assistant Professor of Clinical Gynaecology.
- WILLIAM KENDALL DENISON, A.M., 72 Professors Row.
Professor of the Latin Language and Literature.
- EDWARD E. THORPE, M.D., 711 Boylston Street, Boston.
Instructor in Medical Chemistry.
- CHARLES F. PAINTER, A.B., M.D., 416 Marlborough St., Boston.
Instructor in Orthopedic Surgery.
- CHARLES H. CHASE, S.B., Stoneham.
Instructor in Shopwork.
- HARRY GRAY CHASE, B.E.E., 16 Professors Row.
*Instructor in Electrical Engineering, and Secretary of the
 College of Letters.*
- CHARLES ST. CLAIR WADE, A.M.,* 16 Conwell Avenue.
Professor of the Greek Language and Literature.
- HENRY C. METCALF, A.B., PH.D., 14 Professors Row.
Jackson Professor of Political Science.
- THOMAS WHITTEMORE, A.B., 372 Massachusetts Avenue,
Assistant Professor of English, and Cambridge.
Instructor in History of Fine Arts.
- FRANK G. WREN, A.M., 48 Professors Row.
Assistant Professor of Mathematics.
- FRED DAYTON LAMBERT, A.M., PH.D., 11 East Hall,
Instructor in Natural History. Tufts College.
- CHARLES C. STROUD, A.B., M.D., 72 Curtis St.
Instructor in Physical Training.
- CLARENCE PASCHALL, A.M., 1593 Massachusetts Ave.,
Instructor in German. Cambridge.
- LAWRENCE B. EVANS, PH.D., 167 College Ave.
Professor of History.
- SAMUEL C. EARLE, A.M., 7 Electric Avenue, West Somerville.
*Assistant in English Literature, and Instructor in
 Modern Languages in the Engineering Department.*
- WIGHTMAN W. GARNER, PH.D., 20 West Hall, Tufts College.
Instructor in Chemistry.
- TIMOTHY LEARY, M.D., Tufts College Medical School.
Professor of Pathology and Bacteriology.
- EUGENE T. MCNAMARA, M.D., 773 Tremont Street, Boston.
Instructor in Electro-Therapeutics.

*Absent on leave.

THEODORE C. ERB, M.D., 551 Commonwealth Ave., Boston.
Instructor in Obstetrics.

CHARLES D. KNOWLTON, M.D., 574 Warren St., Roxbury.
Instructor in Pathology and Bacteriology.

ELIZABETH A. RILEY, M.D., 483 Beacon St., Boston.
Instructor in Gynaecology.

WILLIAM J. DALEY, A.B., M.D., 64 Commonwealth Ave.,
Instructor in Ophthalmology. Boston.

JOHN I. FRENCH, M.D., Winchester.
Instructor in Materia Medica and Therapeutics.

HORACE S. MORAN, M.D., 86 Warren St., Roxbury.
Instructor in Obstetrics.

ROBERT W. HASTINGS, M.D., Brookline.
*Instructor in Theory and Practice of Medicine and Assistant
 in Pediatrics.*

GEORGE C. AINSWORTH, D.D.S., 220 Clarendon St., Boston.
Instructor in Orthodontia.

WILLIAM R. RANSOM, A.M., Talbot Avenue.
Walker Special Instructor in Mathematics.

LIZZIE MAUD CARVILL, A.B., 28 Highland Avenue, Somerville.
Instructor in Physical Training for Women.

FRANCIS D. DONOGHUE, M.D., 409 Marlborough St., Boston.
Instructor in Clinical Surgery.

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FRESHMAN PLANS OF STUDY: Professor Lewis, *Chairman*; Professors Brown and Denison.

BOOKS AND SUPPLIES: Professor Lewis, *Chairman*; Professors Durkee and Anthony, Assistant Professor Wren.

INFORMATION: Professor Cushman, *Chairman*; Professor Denison and Assistant Professor Wren.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman*; Assistant Professor Wren, and Dr. Stroud.

EXCUSES: Professor Shipman, *Chairman*; Professor Anthony, and Mr. H. G. Chase.

Requirements for Admission.

Two sets of entrance requirements are open to candidates for admission to the College. But the so-called "Old Requirements" will be discontinued at the close of the current year (1901-1902).

THE NEW REQUIREMENTS.

Every candidate for admission to the College of Letters is required to pass an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

Candidates for the degree of Bachelor of Arts or of Bachelor of Science, except in the Department of Engineering, must have received adequate preparation in certain required subjects, as follows :—

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in Arts and *six* for the courses in Science, subject only to the following limitations :—

1. The fourteen units for the course in Arts shall include those representing one advanced ancient language.
2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

The Secondary subjects and their assigned units are as follows :—

Elementary :	Advanced :
Greek, 4	English, 2
Latin, 6	Greek, 2
French, 4	Latin, 2
German, 4	French, 2
Chemistry, 1 or 2	German, 2
Physics, 1 or 2	History, 2
Botany, 1 or 2	Advanced Algebra, 1
Zoology, 1 or 2	Trigonometry, 1
Geology, 1 or 2	Solid Geometry, 1
Physiology, 1 or 2	

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows :—

Elementary English;
One Elementary Foreign Language;
Algebra;
Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units :

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed information concerning the amount and character of the work demanded in preparation will be found on pages 35 to 46.

While the degree of Bachelor of Philosophy will be granted as heretofore to candidates already upon the course leading to that degree, and new candidates will be admitted until the year 1902, it is recommended that any who may at present be preparing for that course shall arrange their

studies so as to enter as candidates for Bachelor of Arts under the new requirements.

Primary Group.

I. Elementary English.

NOTE.—No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

1. *Reading and Practice*.—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

1902.—George Eliot's *Silas Marner*; Pope's *Iliad*, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*; Shakespeare's *Merchant of Venice*; Cooper's *Last of the Mohicans*; Tennyson's *Princess*; Coleridge's *Rime of the Ancient Mariner*.

1903, 1904, 1905.—Shakespeare's *Merchant of Venice* and *Julius Caesar*; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Rime of the Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be :—

1902.—Shakespeare's *Macbeth* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Burke's *Speech on Conciliation with America* ; Macaulay's *Essays on Milton and Addison*.

1903, 1904, 1905.—Shakespeare's *Macbeth* ; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas* ; Burke's *Speech on Conciliation with America* ; Macaulay's *Essays on Milton and Addison*.

II. One of the following Languages :

I. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):

(a) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following ; Riehl, *Kulturgeschichtliche Novellen* ; Freytag, *Bilder aus der Deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges* ; Kohlrausch, *Das Jahr 1813* ; Schiller, *Der Dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans* ; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie* ; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced German (see Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts :—

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I-IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(a) The translation at sight of passages of simple Attic prose.

(b) A thorough examination on Books I and II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple Attic prose, involving the use of such words, constructions, and idioms only as occur in the prescribed portion of Xenophon.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The History of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, or Myers.

2. The History of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, or Allen, will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to English social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States. Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in History implies one year's work of not less than five periods a week. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

- (a) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; and
- (b) Plane Geometry, including the solution of simple original exercises and numerical problems.

Secondary Group.

The subjects and their values in entrance units are as follows:—

I. Advanced English.

Two entrance units.

One of the following:—

- 1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

II. Elementary German.

Four entrance units.

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French.

Four entrance units.

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin.

Six entrance units.

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek.

Four entrance units.

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German.

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (a). At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of

syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French.

Two entrance units.

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(b) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin.

Two entrance units.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(a) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, construc-

tions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(b) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should include Caesar's Gallic War (Books I-IV); Cicero, seven orations, or six if the Manilian Law be included. Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation from the very first.

IX. Advanced Greek.

Two entrance units.

The advanced examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately :—

(a) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(b) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college:

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books in Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

X. Advanced History.

Two entrance units.

One of the following :—

1. The history of Greece and Rome, as described on page 38, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 39, for those only who have offered Greek and Roman history as primary subjects.

3. The history of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a year's detailed study of a limited period within that field.

Each of these subjects requires two years' study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

XI. Advanced Mathematics.

1. Plane Trigonometry, with its applications.

One entrance unit.

2. Solid Geometry.

One entrance unit.

3. Advanced Algebra.

One entrance unit.

XII. Physics.

(a) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(b) ADVANCED. *Two entrance units.* In addition to (a), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in Physics of such grade as in Hall and Burgin's Text-Book of Physics.

XIII. Chemistry.

(a) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An

Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory note-book.

(b) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book mentioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

XIV. Natural History.

One or two entrance units.

In Natural History the examiners give more weight to the character of work than to time spent; but at least five periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.

2. Zoology : Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology : Huxley, Martin, Peabody.
4. Geology : Dana, Leconte, Scott, Tarr.

XV. Freehand Drawing.

One entrance unit.

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

XVI. Mechanical Drawing.

One entrance unit.

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in this respect. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, parabola, and hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in this subject only on examination.

XVII. Shopwork.

One entrance unit.

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced standing is given in this subject only on examination.

THE OLD REQUIREMENTS.

Subjects for Examination.

The subjects in which candidates for admission to the Freshman class may be examined are given below. The requirements for candidates for the several courses will be found in the schedule of examination groups on pages 51 and 52.

LATIN.

1. LATIN GRAMMAR.—Allen and Greenough's or Harkness's Grammar, including Prosody.
2. CÆSAR.—Gallic War, Books I–IV.
3. CICERO.—Orations against Catiline, for Archias, Marcellus, and the Manilian Law.
4. VIRGIL.—Æneid, Books I–VI.
5. OVID.—Metamorphoses, 2500 lines.
6. LATIN COMPOSITION.—Collar's Latin Composition, and translation into Latin of a connected passage of English prose, not taken from the text-book, but involving only familiar words and idioms.

Alternatives.—While the foregoing requirements are preferred, equivalents will be accepted; also in place of the last two orations of Cicero and requirement 5, an examination may be taken, if desired, on average passages from the above-named works, not included in the portion prescribed.

GREEK.

7. GREEK GRAMMAR.—Hadley-Allen's or Goodwin's Greek Grammar, including Prosody.
8. XENOPHON.—Anabasis, four books, or its equivalent in Attic prose.
9. HOMER.—Iliad, six books.

10 GREEK COMPOSITION.—The translation into Greek of a connected passage of English prose. Woodruff's Greek Composition is recommended as a drill-book.

Alternatives.—In place of requirements 8 and 9, translation at sight of easy passages of Attic prose and average passages from Homer.

GERMAN.

11. ELEMENTARY GERMAN.

The Elementary Examination will be adapted to the proficiency of those who have studied German in a systematic course of five periods a week for *one* year. It will consist of two parts (which, however, cannot be taken separately):—

(a) The translation at sight of a passage of easy prose, containing no rare words.

The passages set for translation will be suited to candidates who have read not less than one hundred duodecimo pages of simple German, chiefly narrative prose; this amount includes sight reading done in class. It is important that all translation be done into clear and idiomatic English.

(b) The translation into German of simple English sentences, to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugation of the weak and the more usual strong verbs, the declension of articles, adjectives, pronouns, and such nouns as are readily classified; the commoner prepositions; the simpler uses of modal auxiliaries; the elements of syntax and word-order. Proficiency may also be tested by direct questioning.

Practice in pronunciation by reading aloud as much as possible from the texts used in the class is recommended; also the writing of German from dictation.

12. INTERMEDIATE GERMAN.—The Intermediate Examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of ordinary German.

The remarks under 13 (a) apply, merely substituting "*two hundred*" for "*five hundred*" in that program.

(b) The translation into German of a passage of simple English prose.

A less extensive knowledge of syntax than for 13 (b) will be presupposed in the selection of the matter for translation.

13. ADVANCED GERMAN.—The advanced examination will be adapted to the proficiency of those who have studied German in a

systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to the amount specified under "Elementary (a)," at least five hundred duodecimo pages of classical and contemporary prose and verse, to be selected from such works as the following: Riehl, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch, *Das Jahr 1813*; Schiller, *Der dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German, and to answer in that language questions asked by the instructor.

FRENCH.

14. ELEMENTARY FRENCH.

The Elementary Examination will be adapted to the proficiency of those who have studied French in a systematic course of five periods a week for *one* year. It will consist of two parts (which, however, cannot be taken separately):—

(a) The translation at sight of easy prose.

The passage set for translation will be suited to candidates who have read not less than two hundred duodecimo pages from the works of at least three different authors; this amount includes sight reading done in class. Not more than half the reading should be from works of fiction. It is important that all translation be done into clear and idiomatic English.

(b) The translation into French of English sentences, or a short connected passage, to test the candidate's familiarity with elementary grammar.

Elementary grammar is understood to include the conjugation of regular and the more usual irregular verbs, such as *aller, tenir, pouvoir, savoir, voir, vouloir, dire, faire*, and those belonging to the classes represented by *dormir, ouvrir, connaître, conduire, craindre*; the forms and positions of the personal pronouns; the uses of other pronouns, and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number, except rare cases; the commoner uses of the article; and the partitive constructions. Proficiency may also be tested by direct questioning.

Pronunciation should be carefully taught, and the pupil should be accustomed to hear and understand the spoken language. The writing of French from dictation is also recommended.

15. INTERMEDIATE FRENCH.

The Intermediate Examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of ordinary French.

The remarks under 16 (a) apply, merely substituting “*three hundred*” for “*eight hundred*.”

(b) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for 16 (b) will be presupposed in the selection of matter for translation.

16. ADVANCED FRENCH.

The Advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts (which may be taken separately):—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read, in addition to the amount specified under “Elementary (a),” not less than eight hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(b) The translation into French of a passage of English prose.

In preparing for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the abil-

ity to follow a recitation conducted in the language and to answer in that language questions asked by the instructor.

MATHEMATICS.

17. ALGEBRA, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents.

18. PLANE GEOMETRY.

19. SOLID GEOMETRY.

HISTORY.

20. (a) ANCIENT HISTORY (Greece and Rome), or

(b) MEDIAEVAL AND MODERN EUROPEAN HISTORY, or

(c) THE HISTORY OF ENGLAND AND THE UNITED STATES.

The following text-books are recommended, and will indicate the amount of preparation required: (a) and (b), Sheldon's Outlines of General History; for ancient History, Oman's or Smith's (smaller) Greece, Allen's Roman People; for Mediaeval and Modern Europe, Myers's General History; for the History of England and the United States, Montgomery's Leading Facts in English History, Fiske's History of the United States for Schools, Johnston's History of the United States for Schools, Montgomery's Students' American History, or Channing's Students' History of the United States. The use of such manuals as Bachelor's American History (Library Method) and Getchell's Study of Mediaeval History by the Library Method is helpful.

ENGLISH.

21. ENGLISH. (See pages 35 and 36).

SCIENCE.

22. PHYSICS.—The requirement in Physics is an acquaintance with the subject as treated in Avery's or Gage's work, or other of similar grade, with special attention to Mechanics and ability to work out numerically problems in that department.

23. CHEMISTRY.—Remsen's Briefer Course, or its equivalent.

24. NATURAL HISTORY.—Any two of the four subjects: Botany, Zoology, Physiology, or Geology. The amount required in each is essentially covered by any good text-book for secondary schools. In Botany and Zoology, laboratory work is of more importance than the study of a text-book. As illustrating the character of preparation required, the following books may be mentioned: in Botany, Bessey's Briefer Course, Campbell's Structural and Systematic Botany, or Spaulding's Introduction to Botany; in Zoology,

Colton's Practical Zoology : in Physiology, Huxley's Elementary Physiology, Jenkins's Advanced Lessons in Human Physiology, or Martin's Human Body, briefer course ; in Geology, Dana's Geological Story Briefly Told, or Leconte's Elements of Geology.

25. FREEHAND DRAWING.—Outline drawing from simple casts, geometric models, and groups of models. See page 45.

Examination Groups.

FOR COURSES LEADING TO THE DEGREE OF A.B.

Candidates under the Old Requirements for courses leading to the degree of Bachelor of Arts must be adequately prepared in the subjects comprised in one of the two following groups :—

Group I.

LATIN, 1, 2, 3, 4, 5, and 6.
GREEK, 7, 8, 9, and 10.
GERMAN, 11, or FRENCH, 14.
MATHEMATICS, 17 and 18.
HISTORY, 20.
ENGLISH, 21.

Group II.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.
GERMAN, 11 and 13. } or { FRENCH, 14 and 16.
FRENCH, 14. } GERMAN, 11.

The group differs from Group I in the substitution for Greek of advanced work in Modern Languages.

FOR COURSES LEADING TO THE DEGREE OF Ph.B.

Candidates for courses leading to the degree of Bachelor of Philosophy must be adequately prepared in the subjects comprised in one of the two following groups :—

Group III.

LATIN, MATHEMATICS, HISTORY, and ENGLISH, as in I.
GERMAN, 11 and 12. } or { FRENCH, 14 and 15.
FRENCH, 14. } GERMAN, 11.

Group IV.

MATHEMATICS, HISTORY, and ENGLISH, as in I.
GERMAN, 11 and 13. } or { FRENCH, 14 and 16. } or { GERMAN, 11
FRENCH, 14. } GERMAN, 11. } FRENCH, 14 .
and 15.

PHYSICS, 22.

CHEMISTRY, 23.

NATURAL HISTORY 24.

{ To be accepted, these subjects must represent an aggregate of at least three years of study, with an average of four periods a week.

[LATIN 1, 2, 3, and 4, three books of the Aeneid, or their equivalent, will be accepted in place of one Intermediate Modern Language; that is GERMAN, 11 and 12, or FRENCH 14 and 15.]

Groups III and IV are offered to meet the needs of graduates of the English courses, so-called, in the best high schools, who may desire to enter upon college study looking toward a degree. It will be seen, by reference to the appropriate numbers in the preceding subject list, that Group III accepts a smaller amount of preparation in the modern languages than that required for entrance through Group II to courses leading to the degree of Bachelor of Arts. Group IV allows the substitution for Latin of an increase over the requirement of Group III in modern languages, and of elementary work in three scientific subjects.

FOR COURSES LEADING TO THE DEGREE OF S.B.

Group V.

MATHEMATICS, HISTORY, and ENGLISH, as in I.

LATIN, 1, 2, and in 4, four books of the Aeneid; or

GERMAN, 11 and 12; or

FRENCH, 14 and 15.

SCIENCE: One year's work, with a weekly average of at least three periods of class work, in one of the following: Chemistry, Physics, Physiology, Botany, Zoology, Geology, Drawing.

This examination group admits to the courses leading to the degree of Bachelor of Science: the General Course in Science, the Special Courses in Biology and Chemistry, and the Medical Preparatory Course. These courses are intended primarily for graduates of English high schools who have a special object before them lying along the lines laid out for these courses.

GENERAL INFORMATION RELATING TO ADMISSION.

The regular examination for admission begins on the day after Commencement, and continues through the two

following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year. The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 4 and 5.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared, and will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools that have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must state the time devoted to each subject offered for admission, the standing of the student according to the school record, and such facts in

regard to the method and means of instruction as the department examiners may call for.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year, and any certificate from a school not on the approved list of the College should be accompanied by the necessary information in regard to courses and facilities of instruction, written upon the official blank of the College, in order to be considered by the Committee on Admission.

Blank forms for certificates, and for application from secondary schools, will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

Requirements for Degrees.

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Philosophy, or Bachelor of Science, according to the examination group upon which they are admitted to the College. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study. Candidates for the degree of Bachelor of Philosophy will be necessarily somewhat more limited in their selection of subjects because of the nature of their preparation, while the courses leading to the degree of Bachelor of Science consist mainly of prescribed work on special lines. Those who have fulfilled the requirements for the degree of Bachelor of Philosophy may obtain the degree of Bachelor of Arts on the satisfactory completion of six term hours of additional work in approved elective subjects.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Throughout the courses students have large liberty in choosing their work, but they are brought into personal advisory relations with the major instructors, who arrange and guide a considerable portion of it, after its general direction has been determined. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS.

For A.B. and Ph.B.

[NOTE.—Each department offers a series of subjects for study. The unit for indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week, for one term, represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.]

(1) The requirement for the degree of Bachelor of Arts or Bachelor of Philosophy is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

(2) The program of prescribed studies is as follows :—

	TERM HOURS.
LANGUAGES (Latin, Greek, French, German; each student to take <i>three</i>)	18
ENGLISH (Rhetoric, Composition, Themes, Literature)	10
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology; each student to take <i>one or two</i>)	12
MENTAL AND *MORAL SCIENCE (each student to take <i>three</i>)	12
PHYSICAL TRAINING	2
	—
A total of	60

The requirements are by groups, not by special subjects, and in each group except Mathematics some choice is allowed the student.

The program of the student in the first year will be made up from the prescribed groups, except by special permission of the Faculty.

(3) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject

* Of the five subjects, Logic, the History of Philosophy, Economics, History, and Public Law, the student must take at least three—three term hours of each. The remaining three term hours may be chosen from the two other subjects, or from the advanced work in the three subjects at first selected.

in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work. The major department and the plan of work for the first half-year must be reported by the student, in the proper form, upon registration on the opening day of the College year.

(4) Acting under the advice of the instructor in his major department, the student will make up a program of eighteen term hours in collateral subjects; that is, subjects tending to strengthen and assist his work in his major. The student's major instructor is to be his official adviser on general matters relating to his college course.

(5) The remaining thirty-two term hours of the required aggregate are to be made up by the free election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects.

(6) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

Summary.

	TERM HOURS.
Prescribed work	60
Major department	18
Collateral subjects	18
Free elective *	32
	<hr/>
	128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-

*An acceptable Commencement part counts as an elective in the second half of the Senior year.

eight term hours, according to the programs for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course, described on pages 98 to 102. The highly specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering, pages 105 to 136.

BALLOU HALL.

Departments of Instruction.

MAJOR DEPARTMENTS.

Any of the following may be chosen as major departments:

ENGLISH,	POLITICAL SCIENCE,
GERMAN,	MATHEMATICS,
FRENCH,	PHYSICS,
LATIN,	CHEMISTRY,
GREEK,	BIOLOGY,
PHILOSOPHY,	ENGINEERING.
HISTORY,	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. All subjects continue through the year unless otherwise indicated.

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours follows the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH.

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND ASSISTANT PROFESSOR WHITTEMORE.

The work of the department includes the theory and practice of composition and the study of literature.

English is required to the end of the second year, or ten term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition. The required work of the second year offers opportunity for choice among several options. Individual conference in both years permits instruction to be adapted to personal needs. Composition as elective is more closely connected with the study of literature, and in such forms as essay, story, oration, poem, play, is indicated in the following scheme of subjects.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. In the advanced classes the seminary method is employed. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

SUBJECTS.

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (first half-year).* PROFESSOR MAULSBY.

*2. A Study of Expression. Lectures, readings, themes, conferences. *Monday, Wednesday, and Friday at 11.45 (second half-year).* ASSISTANT PROFESSOR WHITTEMORE.

3. Daily Composition. *Monday at 9.45 (first half-year, counting as two hours).* PROFESSOR SHIPMAN.

English 3 is open to students who have attained at least Grade B in English 2.

*4. Exposition, narration, and description. Specimens from eminent authors are studied. The written work consists of two themes each week. *Monday at 8.45 (first half-year, counting as two hours).* PROFESSOR SHIPMAN.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week. *Wednesday at 9.45 (first half-year, counting as two hours).* PROFESSOR SHIPMAN.

*6. Essays, with special attention to the construction of extended discourse. Weekly papers, plans, free discussion, individual criticism. *Tuesday at 9.45 (first half-year, counting as two hours).* PROFESSOR SHIPMAN.


7. English Versification. Study of poetic forms and practice in poetic composition. *Three hours for the second half-year.* PROFESSOR MAULSBY.

[9. English Lyrics of the Sixteenth and Seventeenth Centuries. *Monday and Friday at 2.* ASSISTANT PROFESSOR WHITTEMORE.]

[10. The English Bible. *Two hours for the first half-year.* ASSISTANT PROFESSOR WHITTEMORE.]

*11. General View of English Literature; introductory to all literary subjects. Lectures, examinations, and required reading. *Monday and Friday at 10.45 (second half-year).*

MR. EARLE, PROFESSOR KNIGHT, ASSISTANT PROFESSOR WHITTEMORE, AND PROFESSOR MAULSBY.

 Subjects 1 and 2, with four hours selected from subjects 3, 4, 5, 6, and 11, constitute the prescribed work in English.

****12. American Literature.** Lectures, required reading, special topics, essays. *Monday, Wednesday, and Friday at 3.*

PROFESSOR MAULSBY.

[13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*]

[14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Monday, Wednesday, and Friday at 2 (second half-year).* PROFESSOR MAULSBY.]

15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Monday and Friday at 9.45.*

ASSISTANT PROFESSOR WHITTEMORE.

[17. Shakespeare. Reading of selected plays, lectures, examinations, essays. *Monday, Wednesday, and Friday at 8.45 (first half-year).*]

[18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Monday, Wednesday, and Friday at 8.45 (second half-year).* ASSISTANT PROFESSOR WHITTEMORE.]

19. Chaucer. Study of forms and pronunciation, reading of selections from the *Canterbury Tales* and the minor poems, examinations. *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR MAULSBY.

English 19 may be dropped at the end of the first half-year.

[*20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. The subject may be continued through the second half-year, when the whole of *Beowulf* may be read. *Monday, Wednesday, and Friday at 10.45.*]

23. The Short Story. Examples, and composition. *Three hours for the first half-year.* ASSISTANT PROFESSOR WHITTEMORE.

24. History of English Criticism. Discussion, examinations, essays. *Three hours for the second half-year.*

PROFESSOR SHIPMAN.

25. Development of a Literary Form, as (*a*) the drama, (*b*) the novel, (*c*) the lyric. The subject for 1901-1902 will be the drama. *Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR MAULSBY.

English 25 (*a*) is open to those who have taken English 17. Some knowledge of Middle English is desirable (see English 19).

[27. Plays (1875-1900). Examples, and composition. *Two hours for the first half-year.*

ASSISTANT PROFESSOR WHITTEMORE.]

ORATORY.

ASSISTANT PROFESSOR WHITTEMORE.

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for specializing, during two successive years, either in dramatic reading or in senatorial oratory. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

SUBJECTS.

1. The Principles of Oratory Exemplified in Practice. *Thursday at 8.45.* ASSISTANT PROFESSOR WHITTEMORE.

2. Individual Presentation of Standard Poetry and Prose. *Wednesday at 9.45.* ASSISTANT PROFESSOR WHITTEMORE.

[3. Study of Selections from American Orators. Individual presentation of forensics. *Thursday at 2.*]

[4. Dramatic Rendering. Study and delivery of scenes from the standard drama. The possible public presentation of a play. *One hour a week for the year.*]

[5. Formal Oral Debate. The practice of debate, under the usual parliamentary forms of a deliberative body. The possible presentation of a public debate. *One hour, to be arranged.*]

6. The Preparation and Delivery of Original Speeches. *Monday at 2.* ASSISTANT PROFESSOR WHITTEMORE.

7. The History of Oratory. Lectures and prescribed reading. *One hour a week for the year.* PROFESSOR MAULSBY.

Oratory 7 will be open to those who take or who have taken Oratory 1.

GERMAN.

PROFESSOR FAY.

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS.

*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Tuesday, Thursday, and Saturday at 9.45.*

MR. PASCHALL.

German 1 is the equivalent of the entrance requirement in Ele-

mentary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Baumbach, *Der Schwiegersohn*; Gerstäcker, *Irrfahrten*; Seume, *Mein Leben*; Scheffel, *Der Trompeter von Säkkingen*. *Tuesday, Thursday, and Saturday at 8.45.*

MR. PASCHALL.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: course for the rapid reading of modern prose; contemporary authors. Second half-year: course introductory to the classic authors: Lessing, *Minna von Barnhelm*; Schiller, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*. *Monday, Wednesday, and Friday at 9.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

[**3B. German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. German 3B is offered to students who have satisfactorily completed German 2, or its equivalent. *Two hours, to be arranged.*]

4. Schiller and Goethe. *Maria Stuart*; *Wallenstein*; *Egmont*; Robertson's *Correspondence between Goethe and Schiller*; lyrics; collateral reading in historical prose. *Tuesday, Thursday, and Saturday at 11.45.* PROFESSOR FAY AND MR. PASCHALL.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced course in Lessing and Goethe. *Nathan der Weise*, *Emilia Galotti*, *Laocoon*; Tasso, *Iphigenie*, *Faust*, Parts I and II, with collateral reading. *Monday, Wednesday, and Friday at 10.45.*

PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: *Das Nibelungenlied*;

Walther von der Vogelweide. *Tuesday, Thursday, and Saturday at 8.45.*

PROFESSOR FAY.

FRENCH.

PROFESSOR FAY AND PROFESSOR LEWIS.

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS.

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Tuesday, Thursday, and Saturday at 9.45.*

PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate French. Review of grammatical principles, especially with reference to syntax; exercise in composition; reading of modern fiction and drama, such as Merimée's *Colomba* and Sandeau's *Mademoiselle de la Seiglière*. *Tuesday, Thursday, and Saturday at 8.45.*

PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language in a preparatory school.

**3. First half-year: the rapid reading of modern authors: Thiers, Taine, de Vigny. Second half-year: introduction to seventeenth-century classics: Corneille, Racine, Molière, Boileau, with collateral reading concerning the period. Review of grammatical principles. *Monday, Wednesday, and Friday at 8.45.*

PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century. Crane's *Société Française au XVII^e Siècle*; Molière, *Les Précieuses Ridicules*, *Les Femmes Savantes*; Rostand, *Cyrano de Bergerac*; Madame de Sévigné; Madame de la Fayette; Bernardin, *Morceaux Choisis des Classiques Français du XVII^e Siècle*; collateral reading from modern critics. *Monday, Wednesday, and Friday at 8.45.*

PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Monday, Wednesday, and Friday at 2 or 3.* PROFESSOR LEWIS.

Either half-year may count as a half-subject.

6. A systematic study of French literature from the beginning to the middle of the nineteenth century. The manuals of Demogeot and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Tuesday, Thursday, and Saturday at 10.45.*

PROFESSOR FAY.

ITALIAN.

PROFESSOR FAY.

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature.

SUBJECT.

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, *Merope*; Dante, *Divina Commedia* (Scartazzini's edition). *Tuesday, Thursday, and Saturday at 10.45.* PROFESSOR FAY.]

LATIN.

PROFESSOR DENISON.

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and litera-

ture. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archæology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two or more composition courses are offered every year, and a number of other subjects, such as Latin 8 and 9, will be given, with due announcement, at intervals of two or more years. Courses 3, 4, 7, and all designated by numbers above 7, are suitable for graduate students. Such students will, however, be expected to do an extra amount of work in these subjects, and may be required to prepare theses, or make other special investigations.

SUBJECTS.

*1. Livy, Books I and II, or XXI and XXII; Cicero, *De Senectute*, or *De Amicitia*; Horace, *Odes* and *Epodes*; reading at sight; lectures on suitable topics. *Tuesday, Thursday, and Saturday at 10.45 and 11.45.*

Latin 1 is introductory to all later subjects.

2. Tacitus, *Germania* or *Agricola*; Terence, *Phormio*; Petronius, *Cena Trimalchionis*; Apuleius; Pliny, selected letters; reading at sight; lectures on suitable topics. *Tuesday, Thursday, and Saturday at 9.45.*

Latin 2 is open to students who have completed Latin 1.

[3. Tacitus, selections from the *Annals*; Suetonius, selections; Juvenal, principal *Satires*; Martial, selected *Epigrams*; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early Empire. *Monday, Wednesday, and Friday at 11.45.*]

4. Horace, Satires and Epistles; Plautus, two plays; Cicero, selected letters; reading at sight. *Monday, Wednesday, and Friday at 11.45.*

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition. Translation of English narrative, based on the prose authors read in Latin 1. *One hour a week for the year, to be arranged with the instructor.*

6. Latin Composition. *One hour a week, to be arranged with the instructor.*

Latin 6 is open to students who have completed Latin 5, and may be taken most profitably in connection with Latin 2. Particular attention will be paid to idiom.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week for the year, to be arranged with the instructor.*

[8. Catullus and the Elegiac Poets.]

[9. The Private Life of the Romans.]

Latin 9 will be given in 1902-1903.

GREEK.*

PROFESSOR SCHNEIDER AND PROFESSOR WADE.

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English

* During the absence of Professor Wade for the year 1901-1902, subjects usually given by him will be given by Professor Schneider (Greek 3) and Professor Denison (Greek 2).

languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS.

[*1. Elementary. Forman's First Greek Book; Goodwin's Grammar; Xenophon, *Anabasis*; Homer. *Double subject. Monday, Wednesday, and Friday at 11.45, and Tuesday, Thursday, and Saturday at 9.45.* PROFESSOR WADE.]

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, or Plato; Herodotus; Homer, the *Odyssey*; Euripides, one play. *Monday, Wednesday, and Friday at 2.*

PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek. The works read in Greek 2 are chosen primarily to help the student to a mastery of the language, and to give those who can carry the study of Greek no further some knowledge of the branches of Greek literature treated. The literary characteristics of the authors read will be dwelt upon, and lectures on suitable topics will be given.

3. Lysias, selected Orations; Antiphon, Herodes and Choreautes; Demosthenes, *On the Crown*; Euripides, *Bacchantes*; Æschylus, *Seven against Thebes*; reading at sight. *Tuesday, Thursday, and Saturday at 11.45.* PROFESSOR WADE.

The works read in Greek 3 vary from year to year. The aim of this subject is to present systematically the dramatic and forensic literature of classical Greece. The reading is accompanied by lectures.

4. Theocritus, *Idylls* and *Epigrams*; Pindar, *Olympian* and *Pythian Odes*; Tyler's *Selections from Greek Lyrics*; reading at sight

in the Odyssey. *Hours to be arranged with the instructor.*

PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, 'Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Hours to be arranged with the instructor.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented by a general survey of Greek philosophy.

[**6. Greek Composition; practice in sight reading. *One hour a week. Hour to be arranged with the instructor.*

PROFESSOR WADE.]

Greek 6 may be taken by any one who has had the equivalent of Greek 1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

[7. Greek Composition; reading at sight; outside study of some Greek author, including the preparation of an essay. *Hours to be arranged with the instructor.*

PROFESSOR WADE.]

Greek 7 is intended primarily for Sophomores making Greek their major. Others students properly qualified will be admitted.

[8. Advanced Subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. A reading knowledge of French and German is necessary. The preparation of a thesis is required. Properly qualified undergraduates may be admitted. *Hours to be arranged.*

PROFESSOR WADE.]

CLASSICAL ARCHAEOLOGY.

The fields of Greek and Roman Archæology and Art are so intimately connected that they cannot be adequately treated separately. The following related subjects are therefore offered with a view to presenting a reasonably complete survey of ancient architecture, painting, and sculpture.

[1. Greek, Roman, and Etruscan Architecture; Ancient Painting. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

PROFESSOR DENISON.]

[2. Greek and Roman Sculpture. *Monday, Wednesday, and Friday at 10.45 (second half-year).* PROFESSOR WADE.]

The work in both subjects will consist of lectures, collateral reading, and papers. There will be full illustration by photographs, stereopticon, and specimens.

PHILOSOPHY.

PROFESSOR CUSHMAN.

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it offers the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic is open to him. If he wishes to take any of the other subjects in the department, he must begin with the history of philosophy. In all cases where there is opportunity the department advises the student to begin with the history of philosophy. The primer of philosophy is its history, and the natural way is to read this first. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours in each of these subjects, History of Philosophy, Logic, and Psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first year Special students. The Philosophical Conference holds public meetings at least three times during the year. It gives the opportunity to the students of discussing philosophical

subjects collateral with the regular work, and often invites eminent persons to address it on special subjects.

SUBJECTS.

1. Introductory subjects:

*(a) History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Monday, Wednesday, and Friday at 9.45 (first half-year).*

PROFESSOR CUSHMAN.

*[(b) History of Modern Philosophy: the beginnings of modern thought in the Middle Ages, the Renaissance (1500-1689), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Monday, Wednesday, and Friday at 9.45 (first half-year).*

PROFESSOR CUSHMAN.]

Philosophy 1 (a) and 1 (b) are given at the same hour on alternate years.

*(c) Logic, especially Deductive, with an elementary consideration of fallacies. *Tuesday, Thursday, and Saturday at 10.45 (first half-year).*

PROFESSOR SHIPMAN.

2. Logic (advanced), especially Inductive. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 2 is open to those students who have, with distinction, completed Philosophy 1 (c). In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

**3. Psychology. Lectures, and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, the compound contents of consciousness, social psychology. *Monday, Wednesday, and Friday at 9.45 (second half-year).*

PROFESSOR CUSHMAN.

Philosophy 3 regularly follows Philosophy 1 (a) or 1 (b).

[4. Ethics and Literary Criticism: the theory of morals considered constructively, with special reference to literary criticism. The first part of Philosophy 4 is devoted to a discussion of the principal problems in ethics, with a review of the leading histori-

cal theories, to the end of an independent construction on the part of the student. In the last part of the course, to further this end and to help students of literature in criticism, the class will apply and test such constructed theory by criticising characters found in literature. The course is especially arranged for such students. Lectures, text-book. *Monday, Wednesday, and Friday at 10.45.*

PROFESSOR CUSHMAN.]

5. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, and text-book. *Monday, Wednesday, and Friday at 10.45.*

PROFESSOR CUSHMAN.]

The problems discussed are those fundamental to science, ethics, æsthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

Subjects 4 and 5 are given at the same hour on alternate years.

[6. Æsthetics: the theory of Beauty, with illustrations from the fine arts; historical review of æsthetic theories. Lectures and theses, collateral reading. *Tuesday, Thursday, and Saturday, at 10.45 (first half year).*

PROFESSOR CUSHMAN.]

7. Ethics, practical: contemporary problems, education, charities, temperance, socialism. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).*

PROFESSOR TOUSEY.]

Philosophy 7 must be preceded by Philosophy 4.

8. The Philosophy of Religion: classification of theological questions, with critical and constructive work by the class; lectures; wide reading. *Monday, Wednesday, and Friday at 3 (first half-year).*

PROFESSOR KNIGHT.]

9. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).*

PROFESSOR CUSHMAN.]

[10. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence up-

on modern thought. Lectures, prescribed reading. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).*

PROFESSOR CUSHMAN.

[Philosophy 10 will be given in 1902-1903.]

[11. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR CUSHMAN.]

[Philosophy 11 will be given in 1903-1904.]

PEDAGOGICS.

[1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).*

PROFESSOR CUSHMAN, ASSISTED BY TEACHERS
FROM LEADING SECONDARY SCHOOLS.]

HISTORY.

PROFESSOR EVANS AND PROFESSOR BOLLES.

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1, 2, and 3 are the introductory subjects by which the student is prepared for more detailed work. History 4 is devoted to the history of the United States. The subjects numbered from 5 to 12 offer to properly qualified students opportunities to make a more detailed study of limited periods in the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 13 and 14, in church history and the comparative history of religion, offered by the faculty of the Divinity School, are also open to students in the College of Letters. History 15 is devoted to research,

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 6, 7, and 8 a reading knowledge of French will be assumed.

SUBJECTS.

1. The General History of Europe from the Fourth Century to the close of the Middle Ages. The work will include a study of the causes of the decline of Rome, the migrations, the rise of the Arabs, the empire of Charlemagne, the struggle between the Empire and the Papacy, the feudal system, the Crusades, and the Renaissance. Text-book, lectures, assigned readings, and the preparation of themes. *Monday, Wednesday, and Friday at 10.45 (first half-year).* PROFESSOR EVANS.

2. The General History of Europe since the close of the Middle Ages. History 2 is a continuation of History 1, and must be preceded by it. Text-book, lectures, assigned readings, and the preparation of themes. *Monday, Wednesday, and Friday at 10.45 (second half-year).* PROFESSOR EVANS.

History 1 and 2 must precede all other subjects in History, except History 3, which they may either precede or accompany. History 1, 2, and 3 are not open to Freshmen, and will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1, 2, and 3 in their second year.

3. History of England to the end of the reign of Queen Victoria. Text-book, lectures, and themes. *Monday, Wednesday, and Friday at 8.45.* PROFESSOR BOLLES.

4. American History from the Discovery of the Continent to the close of the Civil War. Text-book, lectures, and themes. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR BOLLES.

5. Constitutional History of England. A study of the growth of the constitution of England, with particular reference to the Stuart period. *Monday, Wednesday, and Friday at 3 (first half-year).* PROFESSOR EVANS.

6. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the Thirty Years' War, the rise of Russia, the rule of Richelieu and Mazarin, the age of

Louis XIV, the creation of Prussia, and the Ancient Régime. *Monday, Wednesday, and Friday at 3 (second half-year).*

PROFESSOR EVANS.

History 5 and 6 will not be given in 1902-1903.

[7. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Three hours for the first half-year.*

PROFESSOR EVANS.]

[8. The Nineteenth Century. One of the chief purposes of History 8 is to furnish some explanation of present-day questions in European politics. *Three hours for the second half-year.*

PROFESSOR EVANS.]

History 7 and 8 will not be given in 1901-1902, but may be expected in 1902-1903.

[9. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tuesday and Thursday at 3 (first half-year).*

PROFESSOR BOLLES.]

10. English Social Life. Lectures and illustrations. *Tuesday and Thursday at 3 (second half-year).*

PROFESSOR BOLLES.

History 9 and 10 will not be given in 1902-1903.

[11. The History of Massachusetts. (*First half-year.*)

PROFESSOR BOLLES.]

[12. History of the West, its Exploration and Settlement. (*Second half-year.*)

PROFESSOR BOLLES.]

History 11 and 12 will not be given in 1901-1902, but may be expected in 1902-1903.

13. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).*

PROFESSOR KNIGHT.

14. Ecclesiastical History,—History of the Church, of the Sects, and of Doctrines, from the Apostles to the present time. A History of Doubt. *Tuesday, Thursday, and Saturday at 9.45, and a fourth hour, to be determined.*

PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1901-1902 the subject

of study will relate to the history and government of the United States. History 15 is open only to students who receive special permission from the instructor. Full subject, fortnightly meetings.

PROFESSOR EVANS.

POLITICAL SCIENCE.

PRESIDENT CAPEN, PROFESSOR METCALF, AND PROFESSOR EVANS.

The subjects in the department of Political Science are divided into two groups: Public Law and Administration; and Economics and Sociology.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession. The study of law and government is closely related to the study of history, and hence one year in History is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects, dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and the public administration. A knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

In the division of Economics the aim is to provide, by instruction systematically arranged, a training in the most important branches of political economy, beginning with the elements of the science, and passing by degrees to work of the investigative order. The first two subjects together are designed to give the student a systematic view of the general scope of economic science, and endeavor to satisfy the wants of those who seek simply a general knowledge of Economics. The advanced subjects (11, 12, 13, 14, 15, and 16), which are open only to those who have satisfacto-

rily completed subjects 9 and 10, or an equivalent, are designed to furnish a knowledge of economic and social facts, with their causal relations, and to train students who are drawn to the study of economic questions in certain habits of mind which are required for proficiency in the proper treatment of economic problems. A knowledge of general, constitutional, and political history is desirable.

Public Law and Administration.

1. Political Institutions in the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce's *American Commonwealth*, accompanied by lectures, assigned readings, and the preparation of a thesis. *Monday, Wednesday, and Friday at 11.45 (first half-year).*

PROFESSOR EVANS.

Political Science 1 must be preceded by History 1 and 2, and must precede all other courses in this group, except Political Science 3. Students desiring to take all the subjects in Public Law and Administration should elect History 1 and 2 (and also History 3 if possible) in their second year, and Political Science 1, 2, and 3 in their third year.

2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Monday, Wednesday, and Friday at 11.45 (second half-year).*

PROFESSOR EVANS.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tuesday, Thursday, and Saturday at 9.45 (first half-year).*

PRESIDENT CAPEN.

Political Science 3 must be preceded by History 1 and 2.

4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Monday, Wednesday, and Friday at 8.45 (first half-year).*

PROFESSOR EVANS.

5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles

and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Monday, Wednesday, and Friday at 8.45 (second half-year).* PROFESSOR EVANS.

[6. Elements of Jurisprudence. A study of the leading juristic principles, designed to fit students for a more intelligent study of the law from a professional standpoint. (*First half-year.*) PROFESSOR EVANS.]

[7. Principles of Public Administration, with particular reference to municipal corporations. (*Second half-year.*) PROFESSOR EVANS.]

8. Seminary in Public Law and Administration. See History 15. PROFESSOR EVANS.

Economics and Sociology.

9. Elements of Economics. An introductory course upon the general problems of production, exchange, and consumption of wealth. Text-book: Bullock's Introduction to the Study of Economics. Political Science 9 is open to all students who have had suitable preparation. *Tuesday, Thursday, and Saturday at 10.45 (first half-year).* PROFESSOR METCALF.

10. Practical Problems in Political Economy. Political Science 10 is a continuation of Political Science 9. Lectures on trade unions, co-operation, socialism, silver legislation, monopolies, finance, and kindred subjects. *Tuesday, Thursday, and Saturday at 10.45 (second half-year).* PROFESSOR METCALF.

Subjects 9 and 10, or their equivalent, must precede all other work in Economics.

11. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the industrial revolution and the rise of the factory system; growth of foreign trade; the modern organization of industry; speculation and commercial crises. Lectures, collateral reading, and reports. *Tuesday, Thursday, and Saturday at 8.45 (first half-year).* PROFESSOR METCALF.

12. Principles of Public Finance. Public expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American discussion of finance; Adams's Pub-

lic Finance will be used as a guide. Lectures and discussions. *Monday, Wednesday, and Friday at 10.45 (first half-year).*

PROFESSOR METCALF.

13. Money, Credit, and Banking. An historical course, with special reference to the financial experience of the United States. Lectures, readings, and theses. *Monday, Wednesday, and Friday at 10.45 (second half-year).*

PROFESSOR METCALF.

[14. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Political Science 14 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Monday, Wednesday, and Friday at 8.45 (second half-year).*

PROFESSOR METCALF.]

15. Practical Sociology. A general course upon the nature and methods of social science, comprising a study of the laws of population, the institution of the family, rural and urban communities, pauperism, charities, social treatment of crime, and so on. Lectures, readings, and visits to charitable and correctional institutions in Boston and vicinity. *Tuesday, Thursday, and Saturday at 8.45 (second half-year).*

PROFESSOR METCALF.

16. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in government, economics, statistics, or sociology may be selected. *Hours to be arranged with the instructor.*

PROFESSOR METCALF.

MATHEMATICS.

PROFESSOR BROWN AND ASSISTANT PROFESSOR WREN.

The study of Mathematics is required through the first year. The branches taught are: Algebra, through the subjects included in most college text-books preceding the theory of equations; Solid and Spherical Geometry; Plane Trigonometry, with its applications. Two objects are kept constantly in view: first, to acquire and hold certain mathematical facts for future use; secondly and mainly, to train the mathematical faculties so that the student may acquire the ability to deduce mathematical truths from those previously established. The classroom work of the instructors is a combination of lectures with questioning

of the students to ascertain that the points presented are duly comprehended.

An opportunity to continue the study of Algebra and also a course in Determinants are offered at the middle of the first year. Plane Analytic Geometry is offered as an elective for the first half of the second year. This study may be continued with Higher Plane Curves and Geometry of Three Dimensions during the second half of the second year. Differential and Integral Calculus is required for three half-years in the Engineering courses, and the subject is open as an elective to any student who has taken Plane Analytic Geometry.

SUBJECTS.

1. College Algebra; Solid Geometry; Plane Trigonometry; Applications of Plane Trigonometry. *Monday, Wednesday, and Friday at 8.45 (Division 1). At 9.45 (Division 2).* MR. RANSOM.
2. Advanced Algebra. Theory of Equations and Elements of Determinants. *Tuesday, Thursday, and Saturday at 11.45 (second half-year).* MR. RANSOM.
3. Plane Analytic Geometry. Mathematics 3 is open to students who have taken Mathematics 1. *Monday, Wednesday, and Friday at 11.45 (first half-year).* PROFESSOR BROWN.
4. Advanced Trigonometry. (*First half-year.*) MR. RANSOM.
5. Higher Plane Curves; Analytic Geometry of Three Dimensions. *Monday, Wednesday, and Friday at 9.45 (second half-year).* PROFESSOR BROWN.
6. Differential and Integral Calculus. *Three hours a week (second half-year).* PROFESSOR BROWN.
7. Differential and Integral Calculus, continued. *Three hours a week (first half-year).* PROFESSOR BROWN.
8. Differential and Integral Calculus (advanced course). *Three hours a week (second half-year).* PROFESSOR BROWN AND ASSISTANT PROFESSOR WREN.
9. Weld's Theory of Determinants; Hanus's Elements of Determinants. *Three hours a week (first half year).* MR. RANSOM.

10. Differential Equations. *Two hours a week (second half-year).*
ASSISTANT PROFESSOR WREN.

[See Engineering Courses.]

11. Method of Least Squares. *Two hours a week (second half-year).*
ASSISTANT PROFESSOR WREN.

12. Quaternions. *Three hours a week (first half-year).*
ASSISTANT PROFESSOR WREN.

[See Engineering Courses.]

13. The Theory of the Potential Function. *Three hours a week (second half-year).*
ASSISTANT PROFESSOR WREN.

14. Topics from the History of Mathematics. *One hour a week (second half-year).*
MR. RANSOM.

[See Engineering Courses.]

[*Drawing 1 (DESCRIPTIVE GEOMETRY) is also a distinctly mathematical subject. For further subjects essentially mathematical, see subject 4 in the department of Drawing, and subjects 1 and 6 in the department of Civil and Mechanical Engineering.*]

PHYSICS.

PROFESSOR DOLBEAR.

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book is used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of Physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles. The rapid development of electrical science having quite outstripped text-books, this subject is treated wholly in lectures.

An elective course is offered of about twenty-five lectures upon the relations of Physics to other branches of natural science, introducing the doctrine of the conservation of

energy as applicable to all. After this follows a more extended consideration of the fundamental questions in Physics. Spencer's *First Principles* is read, and its subject-matter thoroughly discussed.

In the Physical Laboratory, beginners are given Stewart and Gee's *Practical Physics*, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satisfactory results are obtained. Glazebrook and Shaw's *Practical Physics* is followed on the subjects of sound, heat, and light, Pickering's *Manipulation* and Kohlrausch's *Measurements* being also used to a limited extent. In electricity and magnetism, Stewart and Gee's second volume is mainly followed, supplemented, in the case of Engineering students, by parts of Gray's *Absolute Measurements* and Kempe's *Testing*. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. Students who are preparing themselves to become teachers of Physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS.

1. General Physics. Lectures and experiments. Physics I is to be taken by students choosing Physics for their prescribed science subject, and is introductory to other subjects in Physics. *Monday, Wednesday, and Friday at 10.45.* PROFESSOR DOLBEAR.

3. Electricity. Thompson's *Elementary Lessons in Electricity and Magnetism*. Lectures and recitations. *Monday, Wednesday, and Friday at 11.45 (second half-year).* MR. H. G. CHASE.

4. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Six hours a week (second half-year).* MR. H. G. CHASE.

5. Electricity: Theory of Measurements. *Three hours a week (first half-year).* Electrical Laboratory: Simple Measurements and Tests. *Two hours a week.* MR. H. G. CHASE.

6. Relation of Physics to Sociology. Lectures. *Tuesday and Thursday at 3 (first half-year).* PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tuesday and Thursday at 3*
(*second half-year*). PROFESSOR DOLBEAR.

CHEMISTRY.

PROFESSOR MICHAEL AND PROFESSOR DURKEE.

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of Engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in Qualitative Analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Subject 6 is intended to teach the use of the blowpipe in chemistry, together with the tests that are of special value in determinative mineralogy. Crystallography is taken up in connection with this subject. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipu-

lation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts and minerals, and in the advanced subject 5, the more complicated minerals, ores, commercial and food products. The analysis of organic substances is included in subject 5. Gas analysis (subject 9) is taught by lectures and laboratory work, principally in the use of technical methods. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The course of lectures on metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of Organic Chemistry begins with a course of lectures, illustrated by experiments and recitations, which cover the general principles and methods, and include description of the most important organic compounds. For those who wish to specialize in this science an opportunity is given by subject 13, in which by lectures the underlying theories of Organic Chemistry are fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15 are especially designed to lead up to research work in chemistry, and students who

have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special course in chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted.

SUBJECTS.

1. General Chemistry. Lectures, recitations, and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations, *on Tuesday and Thursday from 2 to 5; also on Saturday, 8.45 to 11.45, for students of the Special Course in Chemistry (first half-year).* PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations, *on Tuesday and Thursday from 2 to 5; also on Saturday, 8.45 to 11.45, for students of Special Courses in Chemistry (second half-year).* PROFESSOR DURKEE.

4. Quantitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Three hours a week.* PROFESSOR DURKEE.

5. Quantitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Three hours a week.* PROFESSOR DURKEE.

[6. Crystallography and Determinative Mineralogy. Open to students who have taken 1, 2, and 3. Lectures and laboratory work. *Two hours a week (first half-year).*]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Two hours a week (second half-year).* MR. LAMB.

8. Metallurgy. Lectures and recitations. Open to students who have taken Chemistry 1. *Two hours a week (second half-year).* PROFESSOR DURKEE.

9. Gas Analysis. Lectures and laboratory work. Open to students who have taken Chemistry 1, 2, 3, and 4. *One hour a week.*

PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Open to students who have taken Chemistry 1. *Three hours a week (first half-year).*

DR. GARNER.

11. Theoretical Chemistry. Lectures and recitations. Open to students who have taken Chemistry 1. *Two hours a week (second half-year).*

MR. LAMB.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Open to students who have taken Chemistry 1 and 11. *Three hours a week (first half-year).*

MR. LAMB.

13. Organic Chemistry (advanced course). Lectures and recitations. Open to students who have taken 1 and 10. *Three hours a week.*

DR. GARNER.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructor.*

MR. LAMB.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructor.*

DR. GARNER.

16. Original investigations in Chemistry. *Hours to be arranged by the instructor.*

17. Discussion on Chemical Subjects and Recent Investigations. *One hour a week.*

BIOLOGY.

PROFESSOR KINGSLEY AND DOCTOR LAMBERT.

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, as well as abundant material for illus-

tration and dissection. One of the laboratories is devoted to elementary biology, one to advanced undergraduate work, and one to graduate students. There is also a department library containing over 1,400 volumes and over 3,800 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

SUBJECTS.

1. General Biology. Lectures, *Tuesday and Thursday at 11.45*; laboratory work, *Tuesday and Thursday from 2 to 4*.

PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 1 is required of all who elect work in this department, and is a pre-requisite for the other biological courses and for Geology 2.

2. Morphology of Invertebrates. Lectures, *Monday and Friday at 4*; laboratory work, *Monday and Friday from 2 to 4*.

PROFESSOR KINGSLEY.

[3. Morphology of Vertebrates. Continuation of Biology 2, at the same hours. PROFESSOR KINGSLEY.]

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures and recitations. *Tuesday, Thursday, and Saturday at 8.45*; laboratory, *Tuesday and Thursday, 2 to 4 (second half-year, beginning the second week in March, and counting three term hours)*. PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. Lecture, *Monday at 11.45*; laboratory work, *Monday and Friday, 2 to 4 (first half-year)*.

PROFESSOR KINGSLEY.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Six hours, Monday, Wednesday, and Friday afternoons (second half-year).* PROFESSOR KINGSLEY.
Biology 6 requires ability to read French and German.

7. Botany. Lectures, *Wednesday and Friday at 11.45*; laboratory, *Wednesday and Friday, 2 to 4.* DR. LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

GEOLOGY.

For the present the work in Geology will be given in the second half-year. It is required of students in the courses in General Science and in Biology. It is open to others who have passed in Physics 1, Chemistry 1 and 6, and Biology 1.

SUBJECT.

2. Geology. *Tuesday, Thursday, and Saturday from 9.45 to 11.45 (second half-year).* PROFESSOR KINGSLEY.

The work in Geology 2 will begin about March 1.

ASTRONOMY.

1. Recitations and lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tuesday and Thursday at 11.45 (first half-year).*

PROFESSOR DOLBEAR.

DRAWING AND SHOPWORK.

PROFESSOR ANTHONY.

Drawing.

The object of the studies pursued in the department of Drawing is three-fold : first, a development of the theory of technical drawing ; second, the acquirement of precision and rapidity in the execution of the work ; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice

in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him graphically to express his ideas in the most simple and direct manner. The machine drawings are made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work, in the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

SUBJECTS.

[See Engineering Courses.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Four hours a week (second half-year).*

PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour† a week (first half-year).*

PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours* a week for the year.*

PROFESSOR ANTHONY AND MR. ASHLEY.

4. Kinematics. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

5. Machine Drawing (Elementary). *Two hours† a week (second half-year).* PROFESSOR ANTHONY.

6. Machine Drawing (Advanced). *Two hours† a week (first half-year).* PROFESSOR ANTHONY.

7. Elements of Design. *One hour* a week (second half-year).* PROFESSOR ANTHONY.

8. Machine Design (Advanced). *Two hours* a week (first half-year).* PROFESSOR ANTHONY.

SHOPWORK.

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

SUBJECTS.

1. Carpentry, Turning, and Moulding. *Two hours* a week (first half-year).* MR. C. H. CHASE.

2. Pattern-making. *One hour* a week (second half-year).* MR. C. H. CHASE.

3. Forging. *One hour* a week (second half-year).* MR. C. H. CHASE AND MR. R. B. MOORE.

4. Vise and Machine Tools. *Two hours* a week (second half-year).* MR. C. H. CHASE.

5. Project Work. *Three hours* a week (second half-year).* MR. C. H. CHASE.

CIVIL AND MECHANICAL ENGINEERING.

PROFESSOR BRAY.

There are offered in the department of Civil and Me-

* † See foot notes, page 91.

chanical Engineering such selected subjects from the Engineering courses as may be profitably pursued by students in the courses in Liberal Arts who have taken the necessary preliminary work in mathematics, and who may desire to shape their work with reference to pursuing study in Engineering after graduation. Such students will also find subjects adapted to their plans in the departments of Mathematics, Physics, Chemistry, and Drawing. Fuller details of the work in Engineering will be found in the statement of the Engineering Courses. For all the subjects given below, Algebra, Geometry, and Trigonometry are an indispensable preparation.

SUBJECTS.

1. Surveying. General field practice, computations, and plotting. *Two hours* a week (first half-year) ; two hours† a week (second half-year) .*

ASSISTANT PROFESSOR SANBORN AND MR. W. LEWIS CLARKE.

2. Topography and Advanced Surveying. Lectures, recitations, drawing and field practice. *Two hours* a week.*

ASSISTANT PROFESSOR SANBORN.

3. Railroad Surveying. Field practice and office work ; drawing and calculating. *Two hours* a week (first half-year).*

PROFESSOR BRAY.

4. Railroads. Economic locations (to be taken with Engineering 3). *Three hours a week.*

PROFESSOR BRAY.

5. Hydraulics. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR SANBORN.

6. Pure Mechanics. *Three hours a week (first half-year).*

ASSISTANT PROFESSOR SANBORN.

7. Applied Mechanics. *Three hours a week (second half-year).*

PROFESSOR BRAY.

8. Experimental Mechanics (Laboratory). *One hour* a week (first half-year).*

ASSISTANT PROFESSOR SANBORN.

9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*

MR. C. H. CHASE.

* † See foot notes, page 91.

10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).* PROFESSOR BRAY.

11. Highways. *One hour a week (second half-year).*

ASSISTANT PROFESSOR SANBORN.

12. Masonry Construction. *Three hours a week (second half-year).* PROFESSOR BRAY.

Engineering 12 will not be given in 1902-1903.

[13. Sanitary Engineering. *Three hours a week (second half-year).* ASSISTANT PROFESSOR SANBORN.]

14. Roofs and Bridges. *Two hours a week (first half-year).*

PROFESSOR BRAY.

15. Structural Design. *Two hours* a week.* PROFESSOR BRAY.

ELECTRICAL ENGINEERING.

PROFESSOR HOOPER.

To the students in the College of Liberal Arts who may desire to elect advanced work in Electricity, the following subjects are offered. All require a good working knowledge of Algebra, Geometry, and Trigonometry, while subjects 4 and 5 require a like acquaintance with Calculus and Differential Equations.

SUBJECTS.

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).* PROFESSOR HOOPER.

2. Electrical Problems. *Two hours a week (second half-year).* MR. ROLLINS.

3. Electrical Laboratory (advanced course). *Three hours a week for the year.* PROFESSOR HOOPER.

4. Electricity. Alternating Currents. *Four hours a week (first half-year), three hours a week (second half-year).*

PROFESSOR HOOPER.

5. Electricity. Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).*

PROFESSOR HOOPER.

6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).* PROFESSOR HOOPER.

7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).* PROFESSOR HOOPER.

* See foot note, page 91.

8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).* PROFESSOR HOOPER.

MUSIC.

PROFESSOR LEWIS.

The department of Music offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS.

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *One hour a week for the year.*

PROFESSOR LEWIS.

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2.

- [2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading concerning the lives of Bach, Händel, Haydn, Mozart, and Beethoven. *Tuesday at 3, Thursday from 2 to 4.* PROFESSOR LEWIS.]

An elementary knowledge of piano playing is required. Music 2 will be given in 1902-1903.

3. Sight-reading in Song, and Harmonic Analysis. *One hour a week for the year, as arranged by the instructor.*

PROFESSOR LEWIS.

Music 3 will not be given in 1902-1903.

Only those who have finished Music 2 may take Music 3. Work of the prominent composers of choral works in the eighteenth and nineteenth centuries will furnish the material for study in sight-reading, and the harmonic analysis begun in Music 2 will be continued, with special attention to the more difficult problems of modern music.

4. Counterpoint, Simple and Double. Lectures and practical work, based on the manuals of Jadassohn, Bridge, and others; collateral reading concerning the lives of Schubert, Schumann, Mendelssohn, and Wagner. *Three hours a week as arranged by the instructor.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4. Music 4 will not be given in 1902-1903.

5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Three hours a week for the year, as arranged by the instructor.* PROFESSOR LEWIS.

Students who elect Music 5 must have attained Grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Two or three hours a week (second half-year), as arranged by the instructor.* PROFESSOR LEWIS.

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week (first half-year), as arranged by the instructor.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read with facility German and French, are required of students who elect Music 7. The same requirement of concert attendance is made as for Music 5. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor. Music 7 will be given in 1902-1903.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *One hour a week for the second half-year.* PROFESSOR DOLBEAR.]

The first half-year's work in Physics I must have been done by those who elect Music 8.

THE FINE ARTS.

ASSISTANT PROFESSOR WHITTEMORE.

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the

minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Tuesday, Thursday, and Saturday at 10.45.* ASSISTANT PROFESSOR WHITTEMORE.]

2. The Fine Arts of the Middle Ages and the Renaissance. *Tuesday, Thursday, and Saturday at 10.45.*

ASSISTANT PROFESSOR WHITTEMORE.

PHYSICAL TRAINING.

DR. STROUD AND MISS CARVILL.

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumb-bells, and Indian clubs, and exercises in squads, on the various kinds of fixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

Courses in Science.

The special courses in Science lead to the degree of Bachelor of Science. They are entered through Examination Group V, and are intended for graduates of general high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

COURSE IN GENERAL SCIENCE.

PROFESSOR KINGSLEY.

Freshman Year.

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 61.

English 2. A Study of Expression. (*Second half-year.*) See page 61.

German 1. Elementary German. See page 64.

Or German 2. Intermediate German. See page 65.

French 1. Elementary French. See page 66.

Or French 2. Intermediate French. See page 66.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

Physics 1. General Physics. See page 84.

Chemistry 1. General Chemistry. See page 87.

Biology 1. General Biology. See page 89.

Physical Training.

Sophomore Year.

English. *Four hours for the year*, completing the regular requirement in English. See page 61.

German 2. As above.

Or German 3. Course for the rapid reading of modern prose. (*First half-year.*) See page 65;

And Biological German. Reading of some important biological work. *Two hours a week.* (*Second half-year.*)

French 2. (For those entering with German.)

Biology 2 or 3. General Biology. See page 89.

Mathematics 1. Algebra, Geometry, Trigonometry. See page 82.

Chemistry 2. Qualitative Analysis. See page 87.

Chemistry 3. Qualitative Analysis. See page 87.

Physical Training.

Junior Year.

German 3 and Biological German (for those entering with French), as above.

Physics 4. Physical Laboratory. See page 84.

Chemistry 10. Organic Chemistry. See page 88.

Biology 2 or 3. See page 89.

Biology 4. Elementary Physiology. See page 89.

Biology 5. Histology. See page 89.

Senior Year.

Philosophy 1 (a). Introductory subject. (*First half-year.*) See page 73.

Philosophy 3. Psychology. (*Second half-year.*) See page 73.

Biology 7. Botany. See page 90.

Chemistry 6. Crystallography and Determinative Mineralogy. See page 87.

Geology 2. Geology. See page 90.

Special work (six term hours) in Biology, Chemistry, or Electricity.

COURSE IN BIOLOGY.

PROFESSOR KINGSLEY.

Freshman Year.

As in the Freshman year of the course in General Science.

Sophomore Year.

As in the Sophomore year of the course in General Science, except Mathematics.

Junior Year.

German 3B. (*first half-year*). **Biological German** (*second half-year*, for those entering with French). **Biology 2 or 3, and 4, and 5,** as in the Junior year of the course in General Science.

Philosophy 1 (a) and 3, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. See page 88.

Senior Year.

Chemistry 6 and Geology 2, as in the Senior year of the course in General Science.

Biology 7. Botany. See page 90.

Biology 8. Special Research in Biology, including dissertation. *Twelve hours.*

MEDICAL PREPARATORY COURSE.

PROFESSOR KINGSLEY.

Freshman Year.

As in the Freshman year of the course in General Science.

Sophomore Year.

As in the Sophomore year of the course in Biology.

Junior Year.

As in the Junior year of the course in Biology.

Senior Year.

Philosophy 1 (c). Logic, especially Deductive. See page 73.

Philosophy 4. Ethics, the Theory of Morals. See page 73.

Human Anatomy and Physiology (at Tufts Medical School).

Medical Chemistry (at Tufts Medical School).

COURSE IN CHEMISTRY.

PROFESSOR DURKEE.

Freshman Year.

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 61.

English 2. A Study of Expression. (*Second half-year.*) See page 61.

German 1. Elementary German. See page 64.

Or **German 2.** Intermediate German. See page 65.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1. Algebra, Solid Geometry, and Trigonometry. See page 82.

Physics 1. General Physics. See page 84.

Chemistry 1. General Chemistry. See page 87.

Mechanical Drawing. *Two hours a week (first half-year).* See page 91.

Elective. *Three hours a week (second half-year).*

Physical Training.

Sophomore Year.

English. *Four hours for the year,* completing the regular requirement in English. See page 61.

German 2. As above.

Or **French 1.** Elementary French. See page 66.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 4. Physical Laboratory. See page 84.

Chemistry 2. Basic Qualitative Analysis. See page 87.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 87.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 87.

Chemistry 10. Organic Chemistry. See page 88.

Chemistry 11. Theoretical Chemistry. See page 88.

Physical Training.

Junior Year.

Chemistry 5. Quantitative Analysis (advanced). See page 87.

Chemistry 6. Crystallography and Determinative Mineralogy.
See page 87.

Chemistry 8. Metallurgy. See page 87.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced).
See page 88.

Chemistry 13. Organic Chemistry (advanced). See page 88.

Chemistry 14. Laboratory work in Inorganic Preparations. See
page 88.

Chemistry 15. Laboratory work in Organic Analysis. See page
88.

Biology 1. General Biology. See page 89.

Political Science 9 and 10. Elements of Political Economy, and
Practical Problems. See page 80.

Senior Year.

Biology 4. Elementary Physiology. See page 89.

Chemistry 7. Fire Assay. See page 87.

Chemistry 9. Gas Analysis. See page 88.

Chemistry 13. Organic Chemistry (advanced). See page 88.

Elective. *Six hours a week.*

Research and Thesis. *Four hours a week (first half-year); ten
hours a week (second half-year).*

Department of Engineering.

ADMINISTRATIVE BOARD.

ELMER H. CAPEN, A.M., D.D., LL.D., *President.*
 GARDNER C. ANTHONY, A.M., *Dean.*
 CHARLES D. BRAY, C.E., A.M.
 WILLIAM L. HOOPER, A.M., Ph.D.
 FRANK W. DURKEE, A.M.
 FRANK B. SANBORN, C.E., M.S.
 FRANK G. WREN, A.M.
 CHARLES H. CHASE, S.B.

HARRY G. CHASE, B.E.E., *Secretary.*

INSTRUCTORS.

BENJAMIN G. BROWN, A.M., <i>Walker Professor of Mathematics.</i>	38 Professors Row.
WILLIAM R. SHIPMAN, A.M., D.D., LL.D., <i>Goldthwaite Professor of Rhetoric and Professor of Logic.</i>	Talbot Avenue.
CHARLES D. BRAY, C.E., A.M., <i>Professor of Civil and Mechanical Engineering.</i>	98 Professors Row.
AMOS E. DOLBEAR, M.E., Ph.D., <i>Professor of Physics and Astronomy.</i>	134 Professors Row.
CHARLES E. FAY, A.M., Litt.D., <i>Wade Professor of Modern Languages.</i>	92 Professors Row.
WILLIAM L. HOOPER, A.M., Ph.D., <i>Professor of Electrical Engineering.</i>	124 Professors Row.
GARDNER C. ANTHONY, A.M., <i>Professor of Technical Drawing and Dean of the Administrative Board.</i>	14 Professors Row.
DAVID L. MAULSBY, A.M., <i>Professor of English Literature and Oratory.</i>	80 Curtis Street.

- FRANK W. DURKEE, A.M., 38 Professors Row.
Professor of Inorganic Chemistry.
- FRANK B. SANBORN, C.E., M.S., 17 Sacramento St., Cambridge.
Assistant Professor of Civil Engineering.
- HENRY C. METCALF, A.B., PH.D., 14 Professors Row.
Professor of Political Science.
- THOMAS WHITTEMORE, A.B.,
372 Massachusetts Ave., Cambridge.
Assistant Professor of English.
- FRANK G. WREN, A.M., 48 Professors Row.
Assistant Professor of Mathematics.
- CHARLES H. CHASE, S.B., Stoneham.
Instructor in Shopwork.
- HARRY GRAY CHASE, B.E.E., 16 Professors Row.
Instructor in Electrical Engineering.
- CHARLES C. STROUD, A.B., M.D., 72 Curtis St.
Instructor in Physical Training.
- SAMUEL C. EARLE, A.M., 9 Electric Avenue.
Instructor in French.
- WIGHTMAN W. GARNER, A.B., PH.D., 20 West Hall.
Instructor in Chemistry.
- EDWIN BUTLER ROLLINS, B.S., 1 West Hall.
Assistant in Electrical Engineering.
- GEORGE FRANCIS ASHLEY, 11 Laurel St., Somerville.
Assistant in Drawing.

Courses of Instruction.

Four courses are provided in Engineering, each requiring four years of study and leading to the degree of Bachelor of Science.

The courses are in Civil Engineering, Mechanical Engineering, Electrical Engineering, and Chemical Engineering. It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory and shop work.

The subjects for instruction for the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 107, Mechanical Engineering page 109, Electrical Engineering, page 111, Chemical Engineering, page 113.

FRESHMAN YEAR.

[Alike for all courses.]

FIRST TERM	No.	SECOND TERM.	No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Carpentry Turning and		Pattern Making	42
Foundry	40	Physics	70
Physics	70	English	141
English or	140	French or	161
French or	161	German	166
German	166	Physical Training	185
Physical Training	185		

CIVIL ENGINEERING.

The four years' course leading to the degree of Bachelor of Science in Civil Engineering gives a grounding in the principles underlying general engineering. Instruction is given by text-books, lectures, laboratory work, and practice in the field and drafting-room. Thoroughness is accomplished by numerous practical applications rather than by the exclusive study of theory.

Specialization is not allowed to encroach upon the time required for the training in fundamental principles, and it is carried on systematically only in the thesis work of Senior year. Considerable freedom is allowed, however, during the Junior and Senior years, in electing courses from other departments. By this means ample opportunity is offered for obtaining a broad engineering education.

An outline of the course of study may be given as follows: Mathematics through the first three years, elective in the Senior year; English and Modern Languages through the first two years, afterwards elective; Drawing theoretical and applied, throughout the course; Shop Work, the first two years; Electrical Laboratory, Junior year; Chemistry, the second and third years, otherwise elective; Plane, topographical and railroad surveying, the second, third, and fourth years; Hydraulics, Masonry, Bridges, Railroads, Analytic and Applied Mechanics, Structural Design, and Sanitary Engineering, during the Junior or Senior year; also electives in Junior and Senior years in such subjects as Machine Design, Mineralogy, Dynamo-Electric Machinery, Bridge Design, and Steam Engineering.

CIVIL ENGINEERING.

Freshman year, alike for all courses. See page 105.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Forging	44
Mechanism	25	General Chemistry	52
General Chemistry	50	Physical Laboratory	71
Surveying	90	Surveying	90
English 142, 143, 144, 145		English 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185
		Machine Drawing (elective)	26

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Topography	92
Qualitative Analysis	52	Masonry or Sanitary Eng'g	111
Electrical Laboratory	73	Applied Mechanics	109
Topography	92	Structural Design	113
Pure Mechanics	112		117
Experimental Mechanics	115	<i>*Three of the following</i>	
Steam Engine	120	<i>electives :</i>	
<i>*One of the following</i>		Differential Equations	9
<i>electives :</i>		Machine Drawing	26
Machine Drawing (advanced)	27	Machine Design	28
Machine Shop	45	Qualitative Analysis	53
Electricity and Magnetism	74	Metallurgy	57
Geology	130	Electrical Laboratory	73
English		Dynamo-Electric Machinery	77
Modern Languages		Steam Engineering	121
		English	
		Modern Languages	

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Railroad Surveying	94	Highways	93
Railroad Engineering	95	Roofs and Bridges	97
Hydraulics	110	Sanitary Eng'g or Masonry	109
Political Economy	180	Thesis	111
<i>*Three of the following</i>			135
<i>electives :</i>		<i>*Three of the following</i>	
Mathematics		<i>electives :</i>	
Mineralogy	59	Mathematics	61
Quantitative Analysis	61	Quantitative Analysis	65
Gas Analysis	63	Applied Chemistry	67
Electricity	82	Assaying	87
Applied Mechanics	114	Telegraph and Telephone	96
Structural Design	118	Railroads—Economic Locations	98
Geology	130	Bridge Design	121
English		Steam Engineering	
Modern Languages		English	
		Modern Languages	

* Electives must be approved by the Department.

MECHANICAL ENGINEERING.

It is the aim in the course in Mechanical Engineering so to instruct the student in the various subjects that he will be enabled to apply scientific principles to the design of a machine or the proper arrangement of any mechanical plant. In the earlier part of his studies the work common to all engineering courses embraces the careful study of Mathematics, Physics, and Chemistry, which have important bearing upon his subsequent study of the properties of materials used by the engineer. Elementary Technical Drawing and Descriptive Geometry receive careful attention at the beginning of the course. The latter is further developed in its application to practical problems and the study of mechanism.

A systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves, and use of the indicator, are carefully considered. This is followed by a brief course in Thermodynamics, including the mechanical theory of heat, and the properties of gases and steam. Steam Engineering includes the study of the steam-engine, compound and multiple expansion, and of steam boilers of various types; the determination of proper proportions for developing a required power; the estimation of sizes of parts requisite for strength and endurance; the study of the effect and balance of reciprocating parts, and the various kinds of valve motions. Practice is given in engine and boiler testing, and a design with working drawings is required of each student.

Numerous electives are offered in civil and electrical engineering.

Instruction in Carpentry, Wood-turning, Moulding, Pattern-making, Forging, Vise, and Machine-tool work is given during the course.

MECHANICAL ENGINEERING.

Freshman year, alike for all courses. See page 105.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144, 145		English 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185
		Surveying (elective)	91

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Machine Shop	45
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	Steam Engineering	121
Steam Engine	120	<i>*One of the following</i>	
<i>*One of the following</i>		<i>electives:</i>	
Electricity and Magnetism	74	Qualitative Analysis	53
Topography	92	Dynamo-Electric Machinery	77
English		Topography	92
Modern Languages		Sanitary Engineering	109
		Masonry	111
		English	
		Modern Languages	

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Machine Design	29	Engineering Laboratory	123
Hydraulics	110	Structural Design	117
Steam Engineering	122	Thesis	135
Political Economy	180	<i>*Two of the following</i>	
<i>*Two of the following</i>		<i>electives:</i>	
Mathematics		Mathematics	
Quantitative Analysis	61	Quantitative Analysis	61
Gas Analysis	63	Applied Chemistry	65
Electricity	82	Electricity	83
Applied Mechanics	114	Telegraph and Telephone	87
English		Roofs and Bridges	97
Modern Languages		Sanitary Engineering	109
		Masonry	111
		English	
		Modern Languages	

* Electives must be approved by the Department.

ELECTRICAL ENGINEERING.

The aim of the course in Electrical Engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, Mathematics and Drawing are pursued through nearly the entire course.

Physics and Mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of Electricity by means of practical work in the Electrical Laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, and the efficiency of electrical machinery and the location of losses are carefully studied.

The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in net-work of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and poly-phase, is fully developed ; and the many important practical problems thus evolved are carefully treated both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING.

Freshman year, alike for all courses. See page 105.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144, 145		English 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185
		Surveying (elective)	91

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Electrical Laboratory	73
Electrical Laboratory	73	Electricity	76
Pure Mechanics	112	Dynamo-Electric Machinery	77
Experimental Mechanics	115	Applied Mechanics	113
Steam Engine	120	<i>*One of the following</i>	
<i>*One of the following</i>		<i>electives :</i>	
Electricity and Magnetism	74	Machine Shop	45
Topography	92	Qualitative Analysis	53
English		Metallurgy	57
Modern Languages		Topography	92
		Sanitary Engineering	109
		Masonry	111
		English	
		Modern Languages	

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Electricity	82	Electricity	83
Electrical Laboratory	79	Electrical Laboratory	79
Hydraulics	110	Telegraph and Telephone	87
Political Economy	180	Thesis	135
<i>*Two of the following</i>		<i>*Two of the following</i>	
<i>electives :</i>		<i>electives :</i>	
Mathematics		Mathematics	
Machine Design	29	Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Gas Analysis	63	Assaying	67
Mineralogy	59	Electrical Topics	85
Dynamo Design	88	Highways	93
Mathematics of Alternating		Railroads—Economic Locations	96
Currents	84	Roofs and Bridges	97
Railroad Engineering	95	Sanitary Engineering	109
Applied Mechanics	114	Masonry	111
English		English	
Modern Languages		Modern Languages	

* Electives must be approved by the Department.

CHEMICAL ENGINEERING.

The course in Chemical Engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering. The subjects in this course have been arranged to give the training in Mathematics, Physics, Chemistry, and Mechanical Engineering that will assist the graduates of the department in solving the mechanical and chemical problems that may present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in Chemical and advanced Mechanical Engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those in the Mechanical Engineering course. In Chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the Chemical Engineering course find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING.

Freshman year, alike for all courses. See page 105.

SOPHOMORE YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	7	Calculus	7
Technical Sketching	23	Machine Drawing	26
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English 142, 143, 144, 145		English 147	
French or	162	French or	162
German	167	German	167
Physical Training	185	Physical Training	185

JUNIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Calculus	8	Differential Equations	9
Qualitative Analysis	52	Qualitative Analysis	53
Organic Chemistry	55	Metallurgy	57
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	<i>*Two of the following</i>	
Steam Engine	120	<i>electives :</i>	
		Machine Shop	45
		Dynamo-Electric Machinery	77
		Sanitary Engineering	109
		Masonry	111

SENIOR YEAR.

FIRST TERM.	No.	SECOND TERM.	No.
Machine Drawing	27	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Quantitative Analysis	61	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Hydraulics	110	Thesis	135
Political Economy	180	<i>*One of the following</i>	
<i>*Two of the following</i>		<i>electives :</i>	
Mathematics		Mathematics	
Electricity	82	Machine Design	28
Applied Mechanics	114	Sanitary Engineering	109
English		Masonry	111
Modern Languages		Structural Design	117
		English	
		Modern Languages	

* Electives must be approved by the Department.

Departments.

MATHEMATICS.

The required work in Mathematics covers the first three years of the course. During this period the courses pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra, the subjects usually found in college Algebras previous to the Theory of Equations; in Trigonometry, the ordinary formulæ of relations between angles, and the applications in the solution of right and oblique triangles; in Analytic Geometry, the properties of the straight line and the conic sections; in Calculus, the most important principles, such as are embodied in Osborne's Calculus, supplemented by a course of lectures on the applications of the subject to physical and mechanical phenomena; in Differential Equations, the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire advanced work the following list of electives is offered: Advanced Algebra, involving the Theory of Equations and solutions of higher degree equations; Spherical Trigonometry; Solid Analytic Geometry; the Theory of Determinants; and the Theory of Least Squares. Vector Analysis and the Theory of the Potential Function are offered, to allow the student to obtain the necessary instruments for investigating the more complex physical phenomena.

MATHEMATICS.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
1	Algebra	1	1	4	1	Wren	C, E, M, Ch
2	Advanced Algebra, Theory of Equations .	1	2	3	1	Brown	Elective
3	Plane Trigonometry	1	1	2	1	Wren	C, E, M, Ch
4	Spherical Trigonometry	4	1	3	1	Brown	Elective
5	Plane Analytic Geometry	1	2	*	1	Wren	C, E, M, Ch
6	Solid Analytic Geometry	4	2	3	1	Brown	Elective
7	Differential and Integral Calculus	2	1, 2	3	1	Wren	C, E, M, Ch
8	Advanced Differential and Integral Calculu	3	1	2	1	Wren	C, E, M, Ch
9	Differential Equations	3	2	2	1	Wren	E, M, Ch
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	4	2	2	1	Wren	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

* Three exercises a week for eight weeks, and four exercises a week for nine weeks.

DRAWING.

The threefold object of the studies pursued in this department is : first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing ; second, a study of the technique of graphic expression as employed in the modern drafting-room ; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The course in Mechanical Drawing comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts.

Descriptive Geometry is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The course includes the elements of warped surfaces.

Lettering and Technical Sketching are a necessary preparation for the courses in machine and topographical drawing.

The classes in both the Elementary and Advanced Machine Drawing are conducted according to the systems of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism, theoretical and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In the advanced course the student is required to design the parts of simple mechanism from data and sketches only, while in thesis design he is made responsible for the entire design and estimates.

DRAWING.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
20	Mechanical Drawing	1	1, 2	2	3	{ Anthony } { Ashley }	C, E, M, Ch
21	Descriptive Geometry	1	2	*	1	{ Anthony } { Ashley }	C, E, M, Ch
23	Technical Sketching	2	1	1	2	Anthony	C, E, M, Ch
25	Mechanism	2	1	{ 2 } { 1 }	{ 1 } 3	Anthony	C, E, M, Ch
26	Elementary Machine Drawing	2	2	2	2	Anthony	E, M, Ch
27	Advanced Machine Drawing	3	1	2	2	Anthony	E, M, Ch†
28	Elementary Machine Design	3	2	1	3	Anthony	E, M
29	Advanced Machine Design	4	1	2	3	Anthony	M

* Four exercises a week for eight weeks, and three exercises a week for nine weeks. † Fourth year.

SHOPWORK.

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction.

Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work of the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

An examination of the course will show, first, a half-year given to acquiring experience in the use of the ordinary tools in carpentry, and the use of the tools and lathe in wood-turning. Following this, moulding or foundry work is taken up in preparation for pattern-making, which constitutes the remainder of the Freshman course.

Forging gives an introduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding.

In the Junior year instruction in metal work is continued, with vise and machine tools.

Project work, which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the course in machine-shop instruction upon special lines.

SHOPWORK.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
40	{ Carpentry Wood-Turning Foundry }	1	1	2	3	C. H. Chase	C, E, M, Ch
42	Pattern-Making	1	2	1	3	C. H. Chase	C, E, M, Ch
44	Forging	2	2	1	3	{ C. H. Chase R. B. Moore }	C, E, M
45	{ Chipping and Filing Machine Tools }	3	2	2	3	C. H. Chase	M
48	Project	4	2	3	3	C. H. Chase	Elective

* Carpentry, 8 weeks ; Wood-Turning, 4 weeks ; Foundry, 4 weeks. † Civil Engineers may elect No. 45 during the first term.

CHEMISTRY.

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical, descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) comprises lectures and recitations, covering the general principles of descriptive and theoretical organic chemistry.

Mineralogy (59) is taught by lectures, recitations, and laboratory work. The subject is intended to show the use of the blow-pipe and of other tests that are of special value in determining minerals. Crystallography is considered.

Metallurgy (57) is a course of lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. Lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY.

No.	SUBJECT.	Year.	Term.	No. of Exercises per Week.	Length of Exercise.	Preparation Required.	INSTRUCTOR.	COURSE.
50	General Chemistry (Chemistry 1)	2	1, 2	3	1, 2		Durkee	C. E, M, Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C, E, M, Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	(50) (52)	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Garner	Ch
57	Metallurgy (Chemistry 8)	3	2	2	1	50	Durkee	Ch
59	*Mineralogy (Chemistry 6)	4	1	2	1, 2	50 52 53		Ch
61	Quantitative Analysis (Chemistry 5)	4	1, 2	2	3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9)	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry	4	2	2	1	(50) (55)	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Lamb	Ch
69	Theoretical Chemistry (Chemistry 11)	4	2	2	1	50	Lamb	Ch

* Chemistry 6 is not given in 1901-1902.

PHYSICS AND ELECTRICITY.

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of Physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

The laboratory work (72) begins with the more important quantitative determinations in mechanics, sound, light, and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

An elective elementary course in Electricity and Magnetism (74) is offered for those who may wish to supplement the lecture course in General Physics.

In the laboratory course in Electricity (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The course in Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo-room.

Great importance is attached to the course in Electrical Calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C, E, M, Ch
72	Physical Laboratory	2	2	2	3	{ H. G. Chase Rollins }	C, E, M, Ch
73	Electrical Laboratory	3	{ 1 2 }	{ 3 2 }	{ 2 2 }	{ H. G. Chase Rollins }	C, E, M, Ch
74	Electricity and Magnetism	3	1	3	1	H. G. Chase	Elective
76	Electricity (Problems)	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	3	2	{ Hooper Rollins }	E

PHYSICS AND ELECTRICITY.

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electromagnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery (79) is carried on in the laboratory. The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such works as "Alternating Currents," by Bedell and Crehore; "Principles of the Transformer," by Bedell; "Alternating Current Phenomena," by Steinmetz; "Hysteresis in Iron and Other Metals," by Ewing; and have particular investigations assigned them in the laboratory.

In the subject called "Electrical Topics" (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his work in the form of lectures to the class. It is believed that this subject will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The subject on the Telegraph and Telephone (87) outlines the evolution of these arts, and deals exhaustively with the principles involved.

The subject in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This subject must be taken in connection with advanced Machine Design (29).

PHYSICS AND ELECTRICITY.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
82	Electricity (Current Induction)	4	1	4	1	Hooper	E
83	Electricity (Alternating Currents)	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment	4	1	3	1	Hooper	Elective
85	Electrical Topics	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone	4	2	2	1	Dolbear	Elective
88	Dynamo Design	4	1	3	1	Hooper	Elective

ENGINEERING—CIVIL AND MECHANICAL.

Surveying (90, 91) includes principally the elements of general surveying : use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurements of areas and volumes, miscellaneous field problems, computations, and drawing.

Topography (92) follows Surveying (90,91) and comprises careful triangulation from stations near the college, accurate computations, location of contours, plotting and topographical drawing, determination of true north and south line, hydrographic surveying, measurement of flow of water and computation of horse-power available. Also brief time is given to Mining Surveying, Plane Table Surveying, and determination of latitude, longitude, and time.

Highways (93) considers the location and construction of country roads and city streets ; the physical properties of earth, broken stone, and various pavements used as road surface ; economy of traction, grades, construction, and maintenance.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office-work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting-rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs ; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads — Economic Location (96) embraces the theory of location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses. The intention is to give the student comprehensive engineering knowledge of railroad transportation.

ENGINEERING—CIVIL AND MECHANICAL.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
90	Surveying	2	1	2	3	Sanborn	C, E, M, Ch
91	Surveying	2	2	2	2	Sanborn	C
92	Topography	3	1, 2	2	3	Sanborn	C
93	Highways	4	2	1	1	Sanborn	C
94	Railroad Surveying	4	1	2	3	Bray	C
95	Railroad Engineering	4	1	3	1	Bray	C
96	Railroads—Economic Locations	4	2	3	1	Bray	Elective

ENGINEERING — CIVIL AND MECHANICAL.

Roofs and Bridges (97) is largely a study of various methods of computing stresses in common forms of trusses.

Bridge Design (98) is an elective course in design of framed structures of wood and steel.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water-supply, disposal of sewage and garbage. Well-kept notes are required, and include the solution of elementary problems, reports of researches in engineering magazines and books, and accounts of visits that are made by the class to laboratories, waterworks, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, its discharge over weirs and through tubes and conduits, and also embraces the measurement and development of waterpower and the construction of water wheels.

Masonry (111) embodies a consideration of materials, the methods of their preparation and their use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, text-books, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion, and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112, particular attention being given to the strength of materials and of structures. Throughout the course, numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced course, open only to students who have passed satisfactorily in the required mechanics, (112) and (113).

ENGINEERING—CIVIL AND MECHANICAL.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
97	Roofs and Bridges	4	2	3	1	Bray	C
98	Bridge Design	4	2	3	2	Bray	Elective
109	*Sanitary Engineering	3, 4	1	3	1	Sanborn	C
110	Hydraulics	4	2	3	1	Sanborn	C, E, M, Ch
111	*Masonry	3, 4	2	3	1	Bray	C
112	Pure Mechanics	3	1	3	1	Sanborn	C, E, M, Ch
113	Applied Mechanics	3	2	3	1	Bray	C, E, M, Ch
114	Applied Mechanics	4	1	3	1	Bray	Elective

* Subjects 109 and 111 are given in alternate years. 111 will be given in 1901-1902, and 109 in 1902-1903.

ENGINEERING — CIVIL AND MECHANICAL.

Experimental Mechanics (115). Problems are set that require for analysis personal experimentation and correct application of the principles of Pure and Applied Mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus. Results, recorded in well-kept note-books, are submitted for critical examination.

Structural Design (117) is carried on in the lecture and drafting room, and is based upon the principles developed in previous engineering studies. The methods pursued are precisely those of a regularly organized engineer's office.

Structural Design (118) is an advanced course, in continuation of (117).

In Steam Engine (120) explanation of the fundamental principle involved in the generation of steam is followed by a study of engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers. Practice is also given in engine and boiler testing.

Geology (130) is a study of the fundamental principles of structural, historical, and applied geology.

Thesis (135). The thesis prepared by each candidate for a degree in Engineering requires at least one hundred and twenty hours of preparation. A single topic that the student has become interested in is developed by extended personal research, design, or experimentation.

ENGINEERING—CIVIL AND MECHANICAL.

No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
115	Experimental Mechanics	3	1	1	3	Sanborn	C, E, M, Ch
117	Structural Design	3	2	2	3	Bray	C
118	Structural Design	4	1	2	3	Bray	Elective
120	Steam Engine	3	1	3	1	C. H. Chase	C, E, M, Ch
121	Steam Engineering	3	2	3	1	Bray	M
122	Steam Engineering	4	1	3	1	Bray	Elective
123	Engineering Laboratory	4	2	3	2	Bray	M
130	Geology	3, 4	2	3	1	Richards	C, E, M, Ch
135	Thesis	4	2				

ENGLISH.

English is required during the Freshman and Sophomore years. English 1 (140) is mainly for the purpose of learning to write with clearness and correctness. English 2 (141) completes the required English of the Freshman year, being a study of expression. Lectures, themes, and conferences continue throughout the year.

The aim in English 3 (142) is to afford daily practice in writing, and thus to aid the student to gain ease and rapidness of expression. The subject is open only to those who have attained Grade B in English 2.

In English 4 (143) three kinds of writing — narration, description, and exposition — are discussed, and specimens from eminent authors are studied. Two themes each week are required.

English 5 (144) is Argumentative Composition : a study of its requirements as observed by successful writers, with constant practice by the student. The equivalent of two themes each week is required.

English 6 (145) involves the writing of essays, with special attention to the construction of extended discourse. There are weekly papers, plans, free discussion, and individual criticism. This subject is offered for either half-year.

English 11 (147) is designed to give a rapid survey of the development of English literature. Some written work will be required.

Subjects 140 and 141, with four hours selected from 142, 143, 144, 145, and 147, constitute the required work in English. All other subjects in English are open to the election of competent students of Engineering, subject to the conditions of their program engagements and the approval of the Administrative Board.

MODERN LANGUAGES.

An elementary knowledge of French or German, equivalent to No. 160 or 165, is required for admission to any course in Engineering.

The language offered in entrance will be continued during the first two years, unless the candidate for admission receives credit for the equivalent of Intermediate French (161) or Intermediate German (166), in which case he may take the alternative language for the two years; or, if he passed during his Freshman year with high credit in Intermediate French or Intermediate German, he may take the alternative language during his Sophomore year. A student who has thus taken Elementary French (160) or Elementary German (165) in his Sophomore year will be expected to continue that language as an elective during his Junior year. Any subject in modern languages offered in the College may be elected by an Engineer, properly qualified, during his Junior or Senior year, subject to the approval of the instructors in the elected subject. Those who take German pursue the regular college course, but for those engineers who take French separate subjects are offered, especially adapted to their needs. Elementary French (160) is the equivalent of the work required for the entrance examination. Intermediate French (161) comprises a review of verbs and of syntactical difficulties, and the reading of a considerable amount of ordinary prose, with special attention paid to idiomatic translation. Advanced French (162) includes reading of difficult and technical prose, to enable the student to read rapidly and accurately, without translation, such French as he will find of practical value.

POLITICAL ECONOMY.

This elementary course (180), designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

MODERN LANGUAGES.							
No.	SUBJECT.	Year.	Term.	No. of Exercises Per Week.	Length of Exercise.	INSTRUCTOR.	COURSE.
160	French, Elementary	1	1, 2	3	1	Earle	C, E, M, Ch*
161	French, Intermediate	1	1, 2	3	1	Earle	C, E, M, Ch
162	French, Advanced	2	1, 2	3	1	Earle	
163	French, Elective	3 or 4	1, 2	3	1		
165	German, Elementary	1	1, 2	3	1	Fay	
166	German, Intermediate	1	1, 2	3	1	Fay	
167	German, Advanced	2	1, 2	3	1	Fay	C, E, M, Ch*
168	German, Elective	3, 4	1, 2	3	1		C, E, M, Ch
OTHER SUBJECTS.							
180	Economics	4	1	3	1	Metcalf	C, E, M, Ch
185	Physical Training	1, 2	1, 2†	3	1	Stroud	C, E, M, Ch

* One language only is required. † From the middle of November to the middle of March.

PHYSICAL TRAINING.

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and class work is also conducted.

The Graduate Department.

ADMINISTRATIVE BOARD.

ELMER H. CAPEN, A.M., D.D., LL.D., *President.*

AMOS E. DOLBEAR, M.E., PH.D.

GEORGE T. KNIGHT, A.M., D.D., *Secretary.*

J. STERLING KINGSLEY, S.D.

ARTHUR MICHAEL, A.M., PH.D.

WILLIAM L. HOOPER, A.M., PH.D.

WILLIAM K. DENISON, A.M.

INSTRUCTION.

Graduate instruction is given by the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES.

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are : —

ENGLISH,
MODERN LANGUAGES,
LATIN,
GREEK,
HISTORY,

MATHEMATICS,
CHEMISTRY,
BIOLOGY,
ELECTRICITY.

The Degree of Doctor of Philosophy is offered in Chemistry and Biology.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the

degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions : —

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Executive Board of the Graduate Department. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Administrative Board of the Graduate Department before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at the College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which

case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Administrative Board of the Graduate Department.

The candidate for the degree of Doctor of Philosophy must make a written application to the Secretary of the Board at least one month before Commencement. For other conditions, applying to special departments, see pages 142, 143.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS.

ENGLISH. — It is assumed that candidates for the degree of Master of Arts in English will have taken, as undergraduate work, the required number of hours selected from subjects 1 to 11, and in addition that, as major students in English, they will have fulfilled the conditions governing major students by making choice from those subjects in the department that are open to election. Sub-

jects 7*, 17, 18, 19, 23, 24, 25, and 27, so far as these have not been anticipated as undergraduate work, may be counted toward the master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department.

MODERN LANGUAGES. — The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. (See pages 64 to 67.) To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 2 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

LATIN. — Candidates for the degree of Master of Arts in Latin must have completed satisfactorily Latin 1, 2, 3 or 4, or 5, or equivalents. Greek may be taken as minor work with Latin. A reading knowledge of German is essential, and of French and Italian is desirable, for students intending to take advanced work in Latin. Graduate students, when pursuing subjects especially designed for undergraduates, are expected to do an extra amount of work in them. The required thesis must embody the re-

* See "Departments of Instruction," pages 59 to 97.

sult of the special investigation of some author or period, or of some philological or archaeological subject.

GREEK. — Candidates for the degree of Master of Arts in Greek must have completed Greek 1, 2, 3, and 5, or equivalents for these subjects. Latin may be taken as minor work with Greek. Graduate students will be expected to do work of advanced character, whether in classes with undergraduates or on special lines of investigation assigned by the instructor. The required thesis, on some approved topic, relating to some author, period, or philological problem, must give evidence of this advanced attainment. A reading knowledge of German and French is necessary for students intending to do advanced work in Greek.

HISTORY. — Every graduate student who intends to become a candidate for a degree must have taken as undergraduate work History 1, 2, and 3, and must be able to read French works. A working knowledge of German is desirable, and may in some cases be necessary. Of the subjects announced in the program of this department, the more advanced subjects will be accepted as part of the work leading to the degree of Master of Arts. In addition to these subjects, work will be laid out for graduate students in such special lines as individuals may desire to pursue. Certain collateral subjects may be called for in such cases. Graduate students will be expected to do something in the way of independent investigation of a definite subject, the results to be embodied in the thesis required to obtain the degree.

MATHEMATICS. — Graduate students in Mathematics must have passed creditably the prescribed undergraduate work in this department, — Mathematics 1, — and may do graduate work from that point or from such more advanced point as they may have attained. They are required to

complete all the courses offered by the department, from Mathematics 2 to Mathematics 10, to receive the degree of Master of Arts.

CHEMISTRY. — Candidates for the degree of Master of Arts must have completed subjects 1, 2, 3, and 10, or their equivalents. Subjects 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, are offered for graduate students, and satisfactory work must be done in at least five of these subjects. The candidate must present an acceptable thesis and pass satisfactory examinations in all of the subjects studied.

BIOLOGY. — Candidates for the degree of Master of Arts in Biology must have already done work equivalent to Biology 2, 3, and 4; or, lacking that, they must take omitted subjects in addition to their graduate work. The work will be done on the lines of comparative anatomy, histology, or embryology, and will include a thesis embodying original research.

ELECTRICITY. — The candidate for the master's degree in Electricity must have done substantially the work in that department required of the Bachelor of Electrical Engineering. This involves the election during his undergraduate course of studies in this department, if it is expected that the degree will be obtained within one year of graduate study.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

CHEMISTRY. — Candidates must be able to translate scientific German readily and accurately before beginning their work, and must have already taken subjects 1 to 7 inclusive, 9 and 10, or equivalent work. Unless previously qualified, they must take subjects 11, 12, 13, 14, 15, and 19, and devote at least one year to subject 16. Examinations in the above subjects must be satisfactorily

passed, and a thesis embodying an original investigation in Chemistry must be presented.

A well-equipped laboratory is open to graduate students who may wish to pursue special lines of research, and the department is prepared to offer every facility for the encouragement of original investigations.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence, and they must have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

FELLOWSHIPS.

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of an ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June ; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

TUITION.

The tuition fee for the whole course for the degree of Master of Arts, Civil Engineer, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as under-graduate.

METCALF HALL

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Buildings and Equipment.

BUILDINGS.

The College buildings are fifteen in number: Ballou Hall, containing recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar; Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories, — East Hall, West Hall, Dean Hall, for men; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall, the Allen House, and the Start House, for women students. The Bromfield-Pearson School building is available for the technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences.

LIBRARY.

The library contains about forty-two thousand bound volumes and over thirty thousand pamphlets. The College regularly receives more than two hundred periodicals. By favor of Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, and English. The average annual increase by donation and purchase, for the last five years, has been about seventeen hundred volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the collection of the Universalist Historical Society (thirty-five hundred volumes and several thousand pamphlets), to which, on application, students have free access; in the Barnum Museum is the department library of Natural History, numbering about fifteen hundred volumes and four thousand pamphlets; and, besides the full collection of English works relating to music in the library proper, there is in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of thirteen hundred volumes. There are altogether about forty-seven thousand bound volumes available for use.

BARNUM MUSEUM.

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who also gave the College a fund for its maintenance, and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces most of the species in fine specimens.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments.

The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facilities, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

GODDARD GYMNASIUM.

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well fitted for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing-machines, a large wrestling mat, and facilities for basket-ball. The gallery contains a running-track, one thirty-second of a mile in length, and there is a well-lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

CHEMICAL BUILDING.

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

BROMFIELD-PEARSON BUILDING.

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school. It is used also for the department of drawing and for the shop-work in the College.

The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are forge, moulding, pattern, and machine shops. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shops, and also serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

ROBINSON HALL.

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make ; a dividing engine, chronograph, and spectrometer from the Société Genevoise ; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college work-shops.

A photometer room, 39 feet long, is provided, for the photometry of gas, incandescent and arc lamps, and such

experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

THE HALLS.

The halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms for two hundred and fifty men. Met-

calf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' rooms on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students. The Allen House, on Sawyer Avenue, furnishes facilities for eight young women boarding themselves.

General Information.

RELIGIOUS OBSERVANCES.

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

TUFTS COLLEGE STUDIES.

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Seven numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Car-

tilages of the head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Development of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in *Sterna Wilsoni*," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,'" by D. L. Maulsby; and "The Ossicula Auditus," by J. S. Kingsley. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION.

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by the Committee on Freshman Plans of Study, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made by classes as appears below, classification being as shown in the official list last printed:—

Seniors and *all* Specials, 8.45 to 9.30 A.M.

Juniors, 9.30 to 10.15 A.M.

Sophomores, 10.15 to 11 A.M.

Freshmen, 11.00 A.M. to 12 M.

The Committee on Freshman Plans of Study will be in session for consultation from three to five P.M., on the sec-

ond day of the fall examinations, and during the same hours on the afternoon preceding the last day of the first term.

Students will make their plans of study subject to the following regulations:—

No Freshman shall take a program of more than nineteen term hours during the first half-year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in courses aggregating three term hours, or the mark C in courses aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in courses aggregating three term hours, or the mark B in courses aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required. The following program for registration is followed, classification being based upon the last official printed list :—

Seniors, 8.45 to 9.15 A.M.

Juniors, 9.15 to 9.45 A.M.

Sophomores, 9.45 to 10.15 A.M.

Freshmen, 10.15 to 10.45 A.M.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed for their respective classes, or who fail to file with the proper official their plans of study and other required data before one o'clock P.M. on the day of registration. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROMOTIONS.

Students in the courses leading to the degrees of A.B. and Ph.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

ADMISSION FROM OTHER COLLEGES.

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS.

Students wishing to pursue a special course of study, who are not candidates for a degree, are subject to the following regulations:—

1. Every Special student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. Every Special student having less than fifteen program hours a week will be required to obtain at least Grade C in each subject; but those whose program hours number fifteen or more will be treated in the same manner as regular students.

4. A Special student, on leaving College, shall be entitled to a certificate giving the per cent. attained in each course pursued, and signed by the President and the Registrar.

5. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS.

The College year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no College exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES.

In case of absence, from any cause, involving more than three consecutive program appointments, report is required to be made, either in person or by mail, messenger, or pre-

paid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

Students intending to leave college or to drop a single course are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident ; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

EXPENSES.

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students leaving College before the completion of any term are required to notify the Secretary of the Faculty at

once. In case of failure to file such notification, tuition will be charged for the full term.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shopwork, except those in the Engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars, in return for which a place for study is provided in Ballou Hall.

Every student who enters the College of Letters is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following College year; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in commons at \$3.75 per week ; in private families at \$3.50 to \$5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses : —

Tuition	\$100.00	\$100.00
Physical culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	20.00	91.00
Hospital	2.00	2.00
Board, \$3.50 to \$5.00 a week (36 weeks)	126.00	180.00
Total	\$259.00	\$384.00

For the expenses of the students of Engineering, see the special pamphlet issued by the Department of Engineering.

OFFICE HOURS.

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean may be found in his office during the forenoon, except for class engagements. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

SCHOLARSHIPS.

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtain-

ing of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

THE SCHOLARSHIP OF THE CLASS OF 1857.—Founded by the late Heman Allen Dearborn, for the benefit of women students. This scholarship is not available for the present year.

TWO JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Two scholarships of one hundred dollars each for women students, founded by Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP.—Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

The following scholarships of fifty dollars each are awarded annually :—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOHN AND LUCY H. STOWE SCHOLARSHIP.—Founded by Mrs. Lucy H. Stowe, of Lawrence, for the benefit of women students.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by Albert W. Sayles, of Lowell.

The following scholarships are awarded under special conditions :—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years of his course, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

APPOINTMENTS.—The pay of a chapel monitor is *fifty dollars* a year; that of the bell ringer and the organist, *one hundred and fifty dollars* each.

PRIZES.

GODDARD PRIZES.—In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows :—

A prize for the best examination, by a member of the Junior or Senior class, on the *Agricola* of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the *Ars Poetica* of Horace.

A prize for the best examination in Plato's *Symposium*, or the *Agamemnon* of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows :—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular

examinations in all the subjects required for admission to the College, and has been admitted without conditions.

These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

HONORS AND DEGREES.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Courses in Liberal Arts who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the Catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions :—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.
2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.
3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors : Electricity.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not

less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

THE DEGREE OF BACHELOR OF ARTS, OR OF BACHELOR OF PHILOSOPHY, will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 56 to 58.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the General Course in Science, the Special course in Biology or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 98 to 102.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, or Mechanical Engineering will be conferred upon students who shall have completed the required course, as defined on pages 105 to 136.

Students of the courses in Liberal Arts may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, or Mechanical Engineering, after a graduate course of one year in the Engineering Department.

For the advanced degrees of MASTER OF ARTS, DOCTOR OF PHILOSOPHY, CIVIL ENGINEER, ELECTRICAL ENGINEER, and MECHANICAL ENGINEER, see announcement of the Graduate Department, pages 137 to 144.

THE DIVINITY SCHOOL

Faculty of the Divinity School.

ELMER H. CAPEN, D.D., LL.D., PRESIDENT.

CHARLES H. LEONARD, A.M., D.D., DEAN.

Goddard Professor of Homiletics and Pastoral Theology.

WILLIAM G. TOUSEY, A.M., D.D.,

Ryder Professor of Ethics and the Philosophy of Theism.

GEORGE T. KNIGHT, A.M., D.D., SECRETARY.

Packard Professor of Christian Theology.

GEORGE M. HARMON, A.M., D.D.,

Professor of Biblical Theology.

WARREN S. WOODBRIDGE, A.M., B.D.,

Woodbridge Professor of Applied Christianity.

DAVID L. MAULSBY, A.M.,

Professor of English Literature and Oratory.

THOMAS WHITTEMORE, A.B.,

Assistant Professor of English.

HENRY C. METCALF, A.B., Ph.D.,

Professor of Political Science.

NON-RESIDENT LECTURERS.

FREDERICK W. HAMILTON, A.M., D.D.

The History and Literature of the Bible.

FRANK O. HALL, B.D., D.D.

The Psychology of Expression.

HENRY W. RUGG, D.D.

Christian Missions.

JAMES M. PULLMAN, D.D.

Christian Economics.

LEE S. MCCOLLESTER, A.M., D.D.

The Study of History.

THOMAS W. ILLMAN, B.D.

The Spiritual Life.

7

MINER HALL

The Divinity School.

The Divinity School is one of the coordinate departments of Tufts College ; and the general advantages of the College are enjoyed by its students. The College Library, the Museum of Natural History, the Gymnasium, are accessible to Divinity Students ; and courses of study in the College of Letters are open to them, subject, however, to the discretion of the Faculty. The graduates of the Divinity School, in common with the graduates of the other departments, are eligible to membership in the Alumni Association of Tufts College.

CONDITIONS OF ADMISSION.

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts (whose course of study has included Greek) are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. They enter the Second Year of the course summarized on pages 181, 182. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their College course differs from the A. B. course.

3. Persons who have not had college training must approve themselves to the Faculty, by examination or otherwise, as qualified to enter upon a four years' course of study which, in addition to the strictly theological subjects, includes psychology, logic, literature, and history. Students who take this course may, at any time, by vote of the Faculty, become candidates for the degree of B. D.

4. Students from other theological schools will be admitted *ad eundem* on presenting certificates of regular dis-

mission, but none will be received as candidates for the degree of B.D. after the opening of the Senior year.

Every student is expected to be present at the opening of the academic year.

Departments of Instruction.

PSYCHOLOGY.

PROFESSOR KNIGHT.

This course is elementary. It is designed to present the fundamental principles of psychology. It aims especially to prepare the student for work in other departments of the School, and has constant reference to use in the professional life of the minister.

Three hours a week for the first half-year.

LOGIC.

PROFESSOR TOUSEY.

1. The First Year includes the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

2. Second Year students are exercised more especially in the application of logical principles. A review of the fallacious tendencies of the mind is followed by an extended study of fallacies, as exemplified in classic examples and in current discussion. The course concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed; the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

1. *Four hours a week for the second half-year.*

2. *Two hours a week for the first half-year.*

ENGLISH.

PROFESSOR MAULSBY AND ASSISTANT PROFESSOR WHITTEMORE, OF THE COLLEGE OF LETTERS.

The efficiency of the clergyman is so largely conditioned by literary ability that much emphasis is placed upon the study of English. Opportunity is given to the student to elect in the College of Letters, in the direction both of composition and English literature. Well-directed practice in English composition affords direct aid in the formation of literary style, while the influence of the study of the masterpieces of literature, though indirect, is no less powerful in developing a feeling for appropriate language. Moreover, the great poets and prose writers abound in suggestion for the public speaker, in both their thought and its expression. In consequence, divinity students are expected to take such of the offered subjects as are adapted to their individual needs and available time. Some are advised to continue this work throughout their whole theological course.

OLD TESTAMENT.

PROFESSOR WOODBRIDGE.

In the absence of a specialist in this department, the aim is chiefly to secure a working knowledge of the Old Testament in English. Instruction is presented in five parts :—

1. History of the book: the English Bible and other versions; the manuscripts; the canon.

2. History of the people Israel, from the migration to the Christian era, derived from the original sources, with the aid of numerous secondary authorities.

3. History of the literature, origin of particular books and forms of literature, general introduction.

4. Critical and interpretative reading from the Pentateuch, the Prophets, the Law, the Psalms, and the Wisdom literature.

Three hours a week for two years.

5. The Hebrew Language. *Three hours a week for a year.*

NEW TESTAMENT.

PROFESSOR HARMON.

1(a). For the students of the First Year a special study is made of the preparation for Christianity in the thought and sentiment of the Jewish people, the character of their institutions, and their social and religious condition. A similar study is then made of the Graeco-Roman world.

1(b). A course in New Testament Greek is offered, and for this year is in charge of Professor Woodbridge.

2. In the Second Year the sources of the text of the New Testament are considered, with the principles employed in determining the true text, the aim being to render the student intelligent as to the procedure in textual criticism and the bearing this procedure has on the work of exegesis. The history of the canon for the first two centuries, and the historical and literary criticism of the Gospels, are next treated, to secure on the part of the student an understanding of the principal problems involved and the grounds of their discussion, the habit of sober and sound criticism, and a knowledge of the nature and contents of the Gospel writings.

In dealing with the life of Jesus, notes on methods of correct interpretation are given the class, and their application is required in its exegetical work. The significant points and phases in the life and ministry of Jesus are selected and considered, passages from the Greek of the Synoptic Gospels being employed to obtain a knowledge of the mind of Jesus, his relations to the parties and people of his time, the methods he pursued in his ministry, the course of facts in his life, and the doctrines he taught. Incident to this study, the critical points in dispute are considered as they arise. Historical and archaeological questions are examined in their natural connections.

3. In the Third Year, the history and doctrines of the Apostolic Church are studied, the book of Acts being used as the basis. This writing is first examined as an historical authority; passages from it in Greek are chosen, giving the significant stages in the external growth of the church and in its internal development; and these are studied with the aim to trace the first realization of the life of Jesus in the world. The Epistles of St. Paul are critically examined in the order of their origin in his ministry. Critical and exegetical studies of Hebrews and of the Johannine writings conclude the work.

As a part of this study, the theology of the New Testament is taken up. The attempt is made to discover the teaching of Jesus contained in the Synoptic Gospels. With this teaching as the basis, the individual interpretations of the several Synoptists, of the author of the Fourth Gospel, of St. Paul in his earlier and later epistles, of the author of Hebrews, and of the writers of the Catholic Epistles are compared, each writing being first considered by itself. The aim is to obtain the common elements of teaching, and also what is distinctive in each writer and time.

1(a). *Two hours a week for a year.*

1(b). *Three hours a week for a year.*

2. *Four hours a week for a year.*

3. *Four hours a week for a year.*

THE HISTORY OF RELIGIONS.

PROFESSORS KNIGHT AND WOODBRIDGE.

1. History of Non-Christian Religions. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false, and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the Records of the Past, Müller's edition of the

Sacred Books of the East, Müller's own writings, the series entitled Non-Christian Religious Systems ; and, in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Maspero, Jastrow, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the *Encyclopaedia Britannica*.

The religions studied are those of ancient Egypt, Chaldaea, Greece, Rome, and Persia, and of ancient and modern India, China, Japan, and of Turkey.

The chief topics noted are : the Deity ; the Forms and Meaning of Worship ; the Theory of Ethics, and the Sanctions of Moral Life, including the Scheme of Salvation ; the Actual Condition of the People representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

2. The History of Christianity : Church History.

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are : the External Growth of the Church and its Relations to the State ; the Internal Organization ; Intellectual Life and Doctrine ; Moral Life ; the Form and Substance of Worship. In the latter part of the year, special study is

made of the chief religious sects in the United States, and, lastly, of the History of Doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the Ante-Nicene Fathers, and others; the chief secondary authorities on General Church History, such as the works of Schaff, Fisher, Neander, Hase, Alzog; the special historical works of Fisher, Dorner, Ballou, Eddy; and the American Church History series.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

1. *Three hours a week for the first half-year.*

PROFESSOR KNIGHT.

2. *Four hours a week for a year.*

PROFESSORS WOODBRIDGE AND KNIGHT.

·ETHICS.

PROFESSOR TOUSEY.

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as Sentimentalism, Hedonism, Utilitarianism, Intuitionism, Naturalism, and Determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of

truth for which they stand.

During the second half of the year, the class attends more especially to Practical Ethics, dealing with the leading problems of the Individual and the Social Life, and giving particular attention to such subjects as Rights, Education, Charities, State Aid, Temperance, Socialism. Some attention is also given to Casuistry. The course concludes with a review of what is distinctively known as Christian Ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

Three hours a week for a year.

PHILOSOPHY OF THEISM.

PROFESSOR TOUSEY.

At the outset some attempt is made to articulate the Final Problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both Mysticism and Agnosticism come in for notice ; and in discussing the attributes of God, and His relation to the universe, Pantheism and Pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism

and the latest developments of science ; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

Three hours a week for a year.

THEOLOGY.

PROFESSOR KNIGHT.

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of Biblical Theology, Religious History, Natural Theology, Ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions,—the Doctrine of God, the Doctrine of Man, the Doctrine of Salvation, and the Doctrine of the Future Life. The traditional subdivisions are noted historically, but are accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages:—

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.
2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.
3. The organization of the results into a scientific product.
4. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H.

Martensen, J. S. Dodge, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

Four hours a week for the first half-year, and three for the second half-year.

ECONOMICS.

PROFESSOR METCALF.

Students who have not had this subject in College are expected to take at least the introductory portion, marked "Economics and Sociology 9" in the General Catalogue. The aim is to acquaint the student with the principles of secular society, especially those illustrated in the production, exchange, and consumption of wealth.

Three hours a week for the first half-year.

APPLIED CHRISTIANITY.

PROFESSOR WOODBRIDGE.

The topic of study is the ministry of the church in the life of the world. The objective point is the efficiency of pastor and church in the function of social uplift. The course covers three half-years, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written

report of the same for discussion in the class-room.

Two hours a week for a year, and three for a half-year.

HOMILETICS AND PASTORAL CARE.

PROFESSOR LEONARD.

The course in Homiletics covers one-half of the Second Year and all of the Third and Fourth years, and includes the study of the most characteristic and instructive periods in the history of preaching; dictations and lectures on the idea and structure of the sermon; analyses of portions of the Old and the New Testament, with a view to the homiletical use of texts; the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, not less than six during the year, all of which are criticised by the class and by the professor; studies during the Fourth Year on Invention and Arrangement of Material, Modes of Development, Style in Spoken Discourse, Helps in Sermon Preparation from a study of Character and Literature, the Homiletic Habit, Personality in Preaching.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

The course in Pastoral Care considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications, spiritual, mental, social, of a good pastor; the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the

pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

Three hours a week for two-and-one-half years.

ORATORY.

ASSISTANT PROFESSOR WHITTEMORE.

The object of the instruction in the Department of Oratory is to inculcate a natural, impressive, and reverent manner of reading the Bible and the hymn-book, and also to cultivate in preaching a delivery that shall be forcible and sincere. To this end the work of the first year involves consideration of the fundamental principles that underlie all oratory, accompanied by practice to assimilate these principles. In the second year the work becomes specifically adapted to the needs of students of divinity, and includes Scripture and hymn-reading, and practice in both written and unwritten discourse.

One hour a week for two years.

PHYSICAL TRAINING.

DR. STROUD.

Regular exercise in the Gymnasium is ordinarily required, three hours a week of men students, from November to April, during the first two years. The kind of exercise prescribed for each man depends upon his physical condition, as determined by careful medical examination. Provision is made for continuing physical exercise throughout the whole course, according to individual needs.

Course of Study.*

FIRST YEAR.

Psychology.—Elementary : the Relations between Mind and Body ; the Principles of Psychology ; Stout's Manual of Psychology as a text-book ; References to Wundt and Sully and James. *Three hours a week, first half-year.* PROFESSOR KNIGHT.

Logic.—The First Principles of Logic ; Concepts and Propositions ; Immediate Reference ; Deduction ; Induction ; Analogy ; Hypothesis. *Four hours a week, second half-year.* PROFESSOR TOUSEY.

English.—One or more subjects, to be selected, under direction, from those offered in the College of Letters (see General Catalogue, pages 61, 62). *Three hours a week.*

New Testament.—History of the times of Jesus. *Two hours a week.* PROFESSOR HARMON.

Greek of the New Testament.—*Three hours a week.* PROFESSOR WOODBRIDGE.

Oratory.—The Principles of Oratory Exemplified in Practice. *One hour a week.* ASSISTANT PROFESSOR WHITEMORE.

A Science or Language Study (to be selected under direction of the Faculty). *Three hours a week.*

SECOND YEAR.

Logic.—Fallacies ; Analysis of Arguments ; Ethics of Belief. *Two hours a week, first half-year.* PROFESSOR TOUSEY.

Old Testament.—General Introduction. *Three hours a week.* PROFESSOR WOODBRIDGE.

New Testament.—Criticism of the Synoptic Gospels, Textual and Historical ; Hermeneutics ; Life and Teachings of Jesus from the Greek of the Synoptic Gospels, with studies from the life of his time. *Four hours a week.* PROFESSOR HARMON.

Church History.—History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time ; History of Doubt. *Four hours a week.*

PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

* Students holding the degree A.B. begin with the Second Year.

Homiletics.—History of Preaching; The Idea and Structure of the Sermon; Homiletic Analysis. *Three hours a week, second half-year.* PROFESSOR LEONARD.

Oratory.—Practice in the reading of Scripture, Hymns, and in formal and extemporaneous speaking. *One hour a week.*

THIRD YEAR.

Old Testament.—Special studies in Old Testament Literature. *Three hours a week.* PROFESSOR WOODBRIDGE.

New Testament.—Criticism of the Acts and the Epistles; History and Doctrines of the Apostolic Church, from the Greek of the Acts and the Epistles; Criticism, Exegesis, and Doctrines of the Johannine Writings. *Four hours a week.* PROFESSOR HARMON.

Ethics.—The Moral Nature; Ethical Theory; Practical Ethics; Ethics and Theism. *Three hours a week.*

PROFESSOR TOUSEY.

Systematic Theology.—Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. *Four hours a week, first half-year; three hours a week, second half-year.*

PROFESSOR KNIGHT.

Homiletics.—Study of Sermons of Eminent Preachers; Lectures; Sermon Writing and Preaching. *Three hours a week.*

PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, second half-year.*

PROFESSOR WOODBRIDGE.

FOURTH YEAR.

The Non-Christian Religions.—Studies of the Religions and Civilizations of ancient Egypt, Chaldaea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Three hours a week, first half-year.* PROFESSOR KNIGHT.

Philosophy of Theism.—The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.* PROFESSOR TOUSEY.

Economics.—Elements of Economics. The general problems of the production, exchange, and consumption of wealth. Text-book: Bullock's Introduction to the Study of Economics; Lectures. *Three hours a week, first half-year.* PROFESSOR MITCALF.

Homiletics.—Homiletic Analysis; Lectures on Preaching; Composition and Delivery of Sermons. *Three hours a week.*

PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, first half-year.* PROFESSOR WOODBRIDGE.

Pastoral Theology.—The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Three hours a week.* PROFESSOR LEONARD.

General Information.

RELIGIOUS EXERCISES.

Devotional exercises, conducted by the professors and the students, are held daily in the chapel. Members of the upper classes prepare sermons, and preach them in turn before the class. An active branch of the Young People's Christian Union holds regular meetings for religious conference.

ELECTIVE STUDIES.

Students are permitted to elect studies in other departments of the College, subject, however, to the discretion of the Faculty. Opportunities for pursuing advanced studies are offered to graduates and to others sufficiently qualified.

LIBRARIES AND LECTURES.

Students have free access to the general library of the College and to the valuable library of the Universalist Historical Society. Important public libraries of Boston are open to students for consultation.

Supplementary lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods.

It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

DEGREES.

The degree of Bachelor of Divinity is granted to students already holding the degree A. B. who complete satisfactorily the regular course of three years, and to others who make equivalent attainments. No degree, however, is given for less than a year of resident work.

Some students, of exceptional ability and industry, while in the College of Letters, find time to elect work in the Divinity School, and thus are able to obtain the two degrees (A. B. and B. D.) in six years.

Those who seek no degree, but desire a partial or special course of one or two years, may arrange therefor with the Faculty.

THE DEGREE OF BACHELOR OF ARTS. Holders of the degree B. D. who may desire to obtain the degree A. B. are required to complete satisfactorily ninety-six term hours of work, under the following conditions:—

1. That the ninety-six term hours shall include all of the prescribed work necessary for the degree of Bachelor of Arts, as stated on page 57.

2. If any of these prescribed hours have been taken while the candidate was in the Divinity School, and have been counted for the degree of Bachelor of Divinity, an equal number of free electives shall be substituted for them.

3. Any work satisfactorily done in the College of Letters while the candidate was in the Divinity School, which has not been counted toward the degree of Bachelor of Divinity, may be included in the ninety-six term hours required.

The degree of Master of Arts may be received by Bachelors of Arts who do not apply for the degree of B. D. after taking with credit an approved course of one year or more in this school, under conditions defined in the statement of the Graduate Department.

LICENSE TO PREACH.

The regular time for applying for licensure is near the close of the first half of the Third Year. Before that time the members of the Divinity School are not allowed to preach.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL.

Miner Theological Hall contains eight large, well-lighted and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception-Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

EXPENSES.

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it. A remission of two-fifths of this amount may be made by the Executive Committee of the Trustees to students who cannot be accommodated in Paige Hall, or who live at home. The necessary expenses for board, washing, gas, and gymnasium-charges do not exceed two hundred dollars a year.

BONDS AND DEPOSITS.

Each student who enters the Divinity School is required to deposit with the Treasurer of the College either a bond, with two satisfactory sureties, for the amount of one hundred dollars, or the sum of fifty dollars in money, which

sum will bear interest at the rate of four per cent. yearly, and will be returned to the student when he leaves the Divinity School, his term bills first having been paid in full.

PECUNIARY AID: SCHOLARSHIPS AND SPECIAL FUNDS.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School; and the Faculty is authorized to assign special scholarships to those whose circumstances require this extra help. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceeding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships of fifty dollars each are for the benefit of students in the Divinity School:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—
Founded by James D. Perkins, of Brooklyn, N. Y.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

THE MEDICAL SCHOOL

Medical Faculty.

- ELMER H. CAPEN, D.D., LL.D., PRESIDENT, Tufts College.
 HAROLD WILLIAMS, A.B., M.D., 528 Beacon St., Boston.
DRAN, and Professor of the Principles and Practice of Medicine.
 CHARLES P. THAYER, A.M., M.D., Tufts College Medical
 SECRETARY, and Professor of General, School.
Descriptive, and Applied Anatomy.
 HENRY W. DUDLEY, M.D., Abington.
*Professor of Pathology, Emeritus, and Lecturer
 on Legal Medicine.*
 FRANK G. WHEATLEY, A.M., M.D., North Abington.
Professor of Materia Medica and Therapeutics.
 SAMUEL G. WEBBER, A.B., M.D., 419 Boylston St., Boston.
Professor of Neurology.
 ERNEST W. CUSHING, A.B., M.D., LL.D., 168 Newbury St.,
Professor of Abdominal Surgery and Gynaecology. Boston.
 ARTHUR E. AUSTIN, A.B., M.D., Tufts College Medical School.
Professor of Medical Chemistry and Toxicology.
 CHARLES A. PITKIN, A.M., PH.D., South Braintree.
Professor of General Chemistry.
 JOHN L. HILDRETH, A.B., M.D., LL.D., 14 Garden St.,
Professor of Clinical Medicine, Emeritus. Cambridge.
 HENRY B. CHANDLER, M.D., 34½ Beacon St., Boston.
Professor of Ophthalmology.
 WALTER CHANNING, M.D., LL.D., Brookline.
Professor of Mental Diseases.
 FREDERIC L. JACK, M.D., 215 Beacon St., Boston.
Professor of Otology.
 GEORGE H. WASHBURN, A.B., M.D., 377 Marlborough St.,
Professor of Obstetrics. Boston.
 FREDERIC M. BRIGGS, A.B., M.D., 31 Massachusetts Ave.,
Professor of Clinical Surgery. Boston.
 TIMOTHY LEARY, M.D., Tufts College Medical School.
Professor of Pathology and Bacteriology.
 HORACE D. ARNOLD, A.B., M.D., 188 Warren St., Roxbury.
Professor of Clinical Medicine.
 EDWARD O. OTIS, M.D., 381 Beacon St., Boston.
Professor of Pulmonary Diseases and Climatology.
 HOWARD S. DEARING, A.M., M.D., 607 Tremont St., Boston.
Assistant Professor of Clinical Medicine.

HERBERT WARREN WHITE, M.D., 151 Humboldt Ave.,
Assistant Professor of Theory and Practice of Roxbury.
Medicine.

E. CHANNING STOWELL, A.B., M.D., 9 Massachusetts Ave.,
Assistant Professor of Children's Diseases. Boston.

GEORGE W. KAAH, M.D., Hotel Oxford, Boston.
Assistant Professor of Clinical Gynaecology.

GEORGE V. N. DEARBORN, M.D., Ph.D., 38 St. Botolph St.,
Assistant Professor of Physiology. Boston.

JAMES S. HOWE, M.D., 15 Charles St., Boston.
Assistant Professor of Dermatology.

OTHER INSTRUCTORS.

HENRY J. BARNES, M.D., 429 Beacon St., Boston.
Lecturer on Hygiene.

Lecturer on Laryngology.

GEORGE A. BATES, D.D.S., Auburndale.
Lecturer on Histology.

GEORGE A. WEBSTER, M.D., 419 Boylston St., Boston.
Instructor in Otology.

EDWARD E. THORPE, M.D., 711 Boylston St., Boston.
Instructor in Medical Chemistry.

EDWARD L. TWOMBLY, A.B., M.D., 406 Massachusetts Ave.,
Instructor in Clinical Medicine. Boston.

WARREN F. GAY, A.B., M.D., 416 Marlborough St., Boston.
Instructor in Surgery and Assistant in Surgical Pathology.

JOSEPH C. STEDMAN, M.D., Warren Chambers, Boylston St.,
Instructor in Rectal Diseases. Boston.

GARDNER W. ALLEN, A.B., M.D., Warren Chambers,
Instructor in Genito-Urinary Surgery. Boylston St., Boston.

CHARLES F. PAINTER, A.B., M.D., 416 Marlborough St.,
Instructor in Orthopedic Surgery. Boston.

EUGENE T. MCNAMARA, M.D., 773 Tremont St., Boston.
Instructor in Electro-Therapeutics.

THEODORE C. ERB, M. D., 551 Commonwealth Ave., Boston.
Instructor in Obstetrics.

CHARLES D. KNOWLTON, M.D., 574 Warren St., Roxbury.
Instructor in Pathology and Bacteriology.

ELIZABETH A. RILEY, M.D., 483 Beacon St., Boston.
Instructor in Gynaecology.

WILLIAM J. DALEY, A.B., M.D., 64 Commonwealth Ave., Boston.
Instructor in Ophthalmology.

EUGENE THAYER, A.B., M.D., 2683 Washington St., Roxbury.

Demonstrator of Anatomy.

JOHN I. FRENCH, M.D., Winchester.

Instructor in Materia Medica and Therapeutics.

RICHARD F. O'NEIL, A.B., M.D., 416 Marlborough St., Boston.

Demonstrator of Bandaging and Apparatus.

HORACE S. MORAN, M.D., 86 Warren St., Roxbury.

Instructor in Obstetrics.

ROBERT W. HASTINGS, M.D., Brookline.

*Instructor in Theory and Practice of Medicine
and Assistant in Pediatrics.*

RICHARD F. CHASE, M.D., 426 Massachusetts Ave., Boston.

Instructor in Clinical Medicine.

FRANCIS D. DONOGHUE, M.D., 409 Marlborough St., Boston.

Instructor in Clinical Surgery.

JOHN S. MAY, M.D., 219 Warren St., Roxbury.

Assistant in Obstetrics.

OLGA CUSHING-LEARY, M.D., Cushing Hospital, Roxbury.

Assistant in Pathology and Bacteriology.

FREDERICK F. STRONG, M.D., 178 Huntington Ave., Boston.

Assistant in Pathology and Bacteriology.

CHARLES B. DARLING, M.D., 27 Rockville Park, Roxbury.

Assistant in Clinical Gynaecology.

W. HERBERT GRANT, M.D., 419 Boylston St., Boston.

Assistant in Clinical Gynaecology.

EDWARD A. PEASE, M.D., 483 Beacon St., Boston.

Assistant in Clinical Gynaecology.

D. H. CRAIG, M.D., 158 Newbury St., Boston.

Assistant in Clinical Gynaecology.

I. E. ROSENSTEIN REID, M.D., Jamaica Plain.

Assistant Demonstrator of Anatomy.

HENRY S. WARREN, M.D., 915 Boylston St., Boston.

Assistant in Orthopedic Surgery.

J. SHEPPARD MAY, M.D., 219 Warren St., Roxbury.

Assistant in Clinical Medicine and Obstetrics.

CHARLES H. WINN, M.D., 1474 Tremont St., Boston.

Assistant in Clinical Medicine.

ARTHUR W. FAIRBANKS, M.D., 422 Massachusetts Ave.,

Assistant in Clinical Medicine.

Boston.

JOHN P. TREANOR, M.D., Dorchester, Mass.

Assistant in Clinical Medicine.

H. F. R. WATTS, M.D., 372 Dorchester Ave., Boston.

Assistant in Clinical Medicine.

JAMES W. HINCKLEY, M.D., 18 Huntington Ave., Boston.
Assistant in Obstetrics.

Laboratory Assistants.

ALONZO K. PAINE, Hyannisport.
 L. MARY-BELLE HOLT, B.L., Portland, Me.
Anatomy.

FLORENCE GILMAN, So. Braintree.
 FRANK A. MURPHY, Taunton.
 FRANK H. McELROY, Providence, R. I.
 THOMAS W. MURPHY, Lawrence.
 LOUIS MODERNO, Somerville.
General Chemistry.

JOHN PARR, Lawrence.
 ARTHUR N. MAKECHNIE, West Somerville.
 WALTER W. KINGSBURY, Walpole, N. H.
Medical Chemistry and Toxicology.

JOHN V. GALLAGHER, A.B., Milford.
 MARY E. GILL, Brookline.
Pathology and Bacteriology.

LEWIS W. PEASE, Weymouth.
 WILLIAM L. RIPLEY, Newton.
 HORACE C. SWAN, Boston.
 FREEMAN A. TOWER, Sterling Junction.
 MARGARET E. CARLEY, Boston.

Physiology.
 JOHN A. WHITTLE, Wakefield.
 GEORGE W. DERRICK, Cambridgeport.
 GUY F. BRAGDON, Boston.
Histology.

Bursar.

HERBERT T. BROWN, Tufts College.

STANDING COMMITTEES OF THE MEDICAL SCHOOL.

EXECUTIVE.—The President, the Dean, the Secretary, and Drs.
 Wheatley and Leary.

CATALOGUE.—Drs. Thayer, Williams and Briggs.

NOMINATIONS.—The Dean, Drs. Channing and Wheatley.

LIBRARY.—Drs. Williams, Channing, Cushing and Howe.

COURSE OF INSTRUCTION.—The Dean, the Secretary, Drs. Leary,
 Austin and Arnold.

ADMISSION.—The Dean, the Secretary, Drs. Leary and Briggs.

DISPENSARY.—The Dean, Drs. Briggs, Thayer and Arnold.

Dispensary Staff.

Physicians.

HORACE D. ARNOLD, M.D., HOWARD S. DEARING, M.D.

Assistant Physicians.

EUGENE T. McNAMARA, M.D., ANNIE S. K. PATCH, M.D.,
JOHN I. FRENCH, M.D., PATRICK F. KELLIHER, M.D.,
HOWARD W. KNIGHT, M.D., FREDERIC D. LYON, M.D.,
MAX C. VON GROLL, M.D.

Surgeons.

FREDERIC M. BRIGGS, M.D., FRANCIS D. DONOGHUE, M.D.,
FREDERIC W. PEARL, M.D., WILLIAM A. ROLFE, M.D.

Gynaecologists.

ERNEST W. CUSHING, M.D., GEORGE W. KAN, M.D.

Assistant Gynaecologists.

EDWARD L. TWOMBLY, M.D., ELIZABETH A. RILEY, M.D.

Pharmacist.

HENRY D. ABBOT, PH. G.

The Medical School.

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the school to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new Medical School early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre and a half of floor space; is heated and ventilated throughout by both the direct and indirect systems and lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

Departments of Instruction.

ANATOMY.

The course in Anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demon-

strated, and their importance in the operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

PHYSIOLOGY.

The course in Physiology is given throughout the latter half of the first year. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of General Physiology, and suggest some of its relations to the allied sciences, especially Anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination will be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. A three-hour written examination, covering the entire work of the year, is held at the completion of the course, besides subsidiary written examinations, monthly.

By thus concentrating attention upon Physiology during an adequate period it is hoped that a thorough and indispensable grounding in the functions of at least the nor-

mal human organism will be acquired. Advanced work in Physiology will be provided for competent students by special arrangement with the head of the Department.

GENERAL CHEMISTRY.

The course in General Chemistry consists of Descriptive Chemistry and Qualitative Analysis, with so much of Theoretical Chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. Much attention is given to Qualitative Analysis for the sake of the valuable training which it imparts, and the knowledge of Chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in Chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3 in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry. Certificates of equivalent courses in other colleges and professional schools are accepted, but not those of high schools and academies.

HISTOLOGY.

The course in Histology covers the second half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the ele-

ments of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that Histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of Pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of Pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of Obstetrics. The department is furnished with microscopes, the use of which on the payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises, conferences, and recitations will form a part of the course.

BACTERIOLOGY.

Bacteriology is taught as a companion study with Pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to the application of all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facili-

ties for the intelligent demonstration of this subject. Two hours a week of laboratory work are required, and facilities are afforded students for additional individual work. In connection with the demonstrations of gross pathological specimens, a study of the bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

MATERIA MEDICA AND THERAPEUTICS.

Instruction in the department of Materia Medica and Therapeutics consists of lectures and recitations three hours a week during the year. Especial attention is given to the consideration of the physiological action of drugs in its relation to their therapeutical application, to the relation always existing between therapeutics and physiological and pathological laboratory work, and to a thorough description of the essential properties of remedies employed. Samples of drugs will be shown.

Demonstrations by the aid of assistants will be made of the various laboratory processes, and the methods of application of the various remedies used in practice will be taught. Prescription writing and the metric system will receive careful attention. Such of the recent additions to Materia Medica as are deemed worthy will be properly considered.

MEDICAL CHEMISTRY.

Medical Chemistry resolves itself naturally into Physiological Chemistry, Clinical Chemistry, and Toxicology. Each is given its due amount of attention, in lectures, demonstrations, and practical work in the laboratory. The student first acquires a familiarity with proteins, carbohy

drates, and fats, — the bases of all animal tissue. Then he obtains a practical knowledge of the digestions, salivary, stomachic, and pancreatic, associated with the clinical examination of stomach contents. This is followed by the investigation of blood, urine, and bile, both in their physiological and pathological aspects. Toxicology then demands the attention of the student, who examines metallic poisons, both in their simple state and when mixed with organic matter, together with as much attention to ptomaines as is required by their very close association with alkaloids in medico-legal investigations.

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory work of the regular winter course, and summer students are permitted to come up for the laboratory part of the examination in the fall. The first-year students of the previous winter have thus opportunity to do advanced work. The course begins early in June and is eight weeks long. The fee is twenty-five dollars.

PATHOLOGY.

Instruction in Pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes.

In addition to lectures there will be recitations upon a syllabus, embracing the subject of General Pathology, and a series of talks in connection with the demonstrations and laboratory exercises. Oral recitations will be held, the class being divided into sections for this purpose. Written recitations will be held, without notice, at irregular intervals during the term. The standard attained by the student in these exercises will influence his mark in the final examination upon the subject. Demonstration of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts

General Hospital, and other institutions, will take place at least once a week.

This work will include the demonstration and recitation by students on pathological specimens. For the work in pathological histology, two hours a week are required. Students will mount and make drawings of specimens comprehending all of the subjects of General Pathology. Each student will be required to pass a satisfactory examination on the laboratory work.

An opportunity will be given to students in high standing to obtain a training in practical work in Pathology and Bacteriology in the Pathological Department of the Boston Dispensary.

Final examination will be held at the end of the year, three hours of written and two hours of practical work, which may include a report on gross specimens.

Microscopes will be loaned to students for a small fee.

THEORY AND PRACTICE OF MEDICINE.

The course prescribed in the department of General Medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the Theory and Practice of Medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-course, also two hours a week, is held. By such thorough and systematic studies of the diseases he is to meet in the clinical courses of the fourth year, the stu-

dent is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY AND CLINICAL SURGERY.

Instruction in Surgery and Clinical Surgery consists of two lectures weekly, on the general principles and practice of surgery, one clinical lecture a week, one recitation every week from the text-book, a bi-weekly quiz on the preceding lectures, and three one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

OBSTETRICS.

Instruction in the department of Obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY.

A chair of Pulmonary Diseases and Climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the Tuberculosis Department of the Boston Dispensary, formerly President of the American Climatological Association, has been nominated as the head of this department. Medical Climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of Sanatorium treatment will be discussed, and one or more Sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to the Dean. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary tuberculosis in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this course.

GYNAECOLOGY AND ABDOMINAL SURGERY.

Instruction is given both by lectures and clinical teaching. Lectures are given to the third-year class once a week on Gynaecology and once a week on Abdominal Surgery, including hernia, appendicitis, and the major operations on the female generative organs. There will also be several demonstrations of the various operations, on the cadaver.

Once a week a quiz is held on the lectures. Arrangements have been made by which the students of the fourth-

year class who elect Clinical Gynaecology may witness operations in the hospital service of the professor in charge.

DISEASES OF CHILDREN.

Instruction in Diseases of Children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great; examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

HYGIENE.

The course in Hygiene consists of a series of lectures and recitations upon personal hygiene, communicable and preventable diseases, occupations, trade nuisances, water-supply, sewerage, houses, school hygiene, hospitals, quarantine, municipal sanitation, climate, vital statistics, and so on. A preliminary course is given in the first year on personal hygiene, with the intention of instructing the students upon the laws of health and right living. It is proposed in the near future to establish a course for graduates in the subject of General Hygiene, for which a special degree will be conferred.

CLINICAL MEDICINE.

The aim of the course in Clinical Medicine is to give the student a practical acquaintance with disease.

Normal Auscultation and Percussion will be taught in the latter part of the second year.

During the third year the work in Auscultation and Percussion will be extended to the study of abnormal

conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture once a week in Medical Diagnosis.

During the fourth year there will be three regular exercises weekly, besides numerous clinics. One hour a week will be given to didactic lectures. This will be followed by lectures on Military Medicine by assistant Professor Dearing, on Commercial Medicine by Dr. Stowell, and on Diseases of the Blood by Professor Arnold. Practical work in the examination of the blood will be given in the laboratory by Dr. Strong, under the supervision of Professor Leary.

The second exercise will be a clinical conference, one hour a week. At this conference reports of cases written by the fourth-year students will be read, and will be discussed and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students will also be admitted to the clinical conferences. The third exercise will be a clinical lecture by Professor Arnold in the amphitheatre of the Boston City Hospital, once a week throughout the school year. Patients from the hospital wards will be shown, and the diagnosis and treatment will be discussed. Third-year students will also be admitted to this lecture.

In addition, clinical exercises will be held at the following institutions: at the Boston Dispensary, by Professor Williams and Dr. Chase; at the Cambridge Hospital, by Professor Hildreth; at the Boston City Hospital, by Professor Arnold; at St. Elizabeth's Hospital, by Assistant Professors Dearing and White; and at the School Dispensary, by Assistant Professor Dearing and Drs. Chase and Patch. Students will also be taken on visits in the "Districts" of the Boston Dispensary. Here they will see cases of sickness in their homes, and will be enabled to follow the changes in the condition of the

patients. They will be required to make a special study of certain of these cases, and to make a written report. These reports will furnish the material for clinical conferences.

There will be a three-hour written examination at the end of the fourth year. In addition to this, the mark for the course will be based on a written report of two cases, the satisfactory examination of three cases at the clinics, and upon the work in general in this department.

CLINICAL AND OPERATIVE SURGERY.

The course in Clinical and Operative Surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continuing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston Dispensary, at the Carney Hospital, and at St. Elizabeth's Hospital, from October 1 to May 15. At these exercises students make personal examination, and report to the instructor on successive cases as they enter the consulting-room, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of this class also have numerous opportunities of administering ether, of assisting at operations and, with certain limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, the treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after January 1 one confer-

ence is held each week, at which two papers are read and then freely discussed by the whole class.

The course in Operative Surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

LARYNGOLOGY.

Instruction in Laryngology and Rhinoscopy will be given at the Boston Dispensary, beginning January 1, 1902, and continuing until April 1. The students of the fourth-year class will be divided into sections, and will visit the clinic of the instructor on Tuesdays, Wednesdays, Thursdays, and Fridays of each week, where an opportunity is afforded them for studying the diagnosis and treatment of diseases of the throat and nose, by actual examination of the patients. The object of the course is to give instruction in cases of this class which are liable to come under the observation of the general practitioner, such as adenoid growth, diphtheretic false membranes, syphilis, and tuberculosis. The subject is also illustrated by lectures and diagrams.

OPHTHALMOLOGY.

The course in Ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given at the Massachusetts Charitable Eye and Ear Infirmary once a week through the school year, and will be fully illustrated by clinical cases.

CLINICAL GYNAECOLOGY.

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

NEUROLOGY.

There will be lectures upon diseases of the nervous system, especially such as are commonly met in practice. Cases will be examined before the class, and there will be opportunity for clinical observations at the Boston Dispensary. The anatomy and physiology of the nervous system will be considered so far as is necessary to understand the relations of symptoms to organic changes in the nerve centres.

MEDICAL DISEASES.

Instruction in Mental Diseases will consist of a course of clinical lectures so arranged as to cover the most important part of the subject. Last year, through the courtesy of the trustees and the superintendent of the Boston Insane Hospital, many of the lectures were given in that institution, enabling the students to see the various forms of insanity at close range. A valuable clinic was held at the Massachusetts School for Feeble-Minded, where nearly all kinds of imbecility were seen and described by the superintendent. Correct methods of hospital management were also illustrated by what was being done at these institutions, as well as at the McLean Hospital.

The course will begin at the Boston Dispensary, and it is the intention to continue it, so far as possible, according to the methods of last year.

LEGAL MEDICINE.

The course in Legal Medicine consists of one lecture each week for twelve weeks, and will include all of the subjects which are usually included under the head of medical jurisprudence, together with a thorough course in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

ORTHOPEDIC SURGERY.

The course in Orthopedic Surgery consists of one lecture a week at the school for the first half-year, and two exercises a week during the second half-year, at the Carney Hospital, the class being divided into sections. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative orthopedic work.

MERCANTILE AND MILITARY MEDICINE.

The course in Mercantile and Military Medicine is intended to acquaint the student with the duties peculiar to the army and the navy surgeon and the life-insurance examiner. Instruction is given in this course in the methods of physical examination, the preparation of certificates, and other allied subjects.

OTOLOGY.

The instruction in Otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary. An elective course consists of clinical work at the same institution.

ELECTRO-THERAPEUTICS.

The course in Electro-Therapeutics will consist of twelve lectures, with quizzes. The lectures include the exhibition of apparatus and explanation of the various methods of the application of electricity in disease.

DERMATOLOGY.

The course in Dermatology will consist of weekly lectures from October to December. From January to June there will be three clinics weekly at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES.

The various diseases of the Genito-Urinary system will be considered and illustrated by cases, as far as practicable.

DISEASES OF THE RECTUM.

Instruction in Diseases of the Rectum will be given by Dr. Stedman, at the Boston Dispensary.

NORMAL MEDICAL PSYCHOLOGY.

An optional course in Normal Medical Psychology will be given to the fourth-year class in weekly lectures during the first half-year. Its aim is to discuss in their more general relations certain topics of great practical importance to the medical practitioner: such topics for example as suggestibility and hypnosis, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual and so better to treat his disease. But, in addition to this, the chief value perhaps of such information, the lectures will afford a brief basis of general psychology, which will tend to make the mental phenomena of the diseases of the mind and nervous system more easily understood.

Requirements.

FOR ADMISSION TO FIRST-YEAR CLASS.

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English : a composition of two hundred words upon some subject of general interest ; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1901 and 1902 will be chosen from the following :—

(1) Prescott's Conquest of Mexico ; (2) Thackeray's Henry Esmond ; (3) Burke's Speech on Conciliation with America.

(b) Arithmetic : such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, ratio and proportion.

(c) Algebra : such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(d) Plane Geometry.

(e) Physics : such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(f) Latin : an examination upon such elementary work as is usually included in one year of study ; as, for example, the first fifteen chapters of Caesar's Commentaries and the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition ; but no student will be allowed to begin his second year whose entrance conditions are not made up.

EXCEPTIONS.—Graduates of an approved high school, college, or university, or institution of similar grade,

and students holding certificates of entrance to a college or university, or holding the State of New York Regents' certificate, and graduates of certain college preparatory schools, may be admitted without entrance examination. The institutions, however, issuing these certificates must be accredited as standard by the communities within which they are located. These examinations will be held on the second Monday in June and on the Tuesday before the commencement of lectures.

Students who intend taking entrance examinations are required to notify the Secretary one week beforehand.

Advanced Standing.

Graduates of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in Anatomy, Physiology, General Chemistry, and Histology; graduates of other colleges who have complied with similar requirements; and students from other approved medical schools who have passed their examinations upon these subjects, may be admitted to the second-year class.

Promotion.

Students who have passed a majority of the first-year examinations, and who have made up all entrance conditions, are admitted to the second-year class.

The Third-Year Class.

Students who have passed all the first-year examinations and a majority of the second-year examinations may be admitted to the third-year class.

The Fourth-Year Class.

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

GRADUATION.

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements :

1. They must furnish certificates that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of medical lectures at some accredited medical college, the last of which shall have been at this school, and no two courses in the same twelve months.
3. They must have passed all the required examinations.
4. They must have attended two cases of obstetrics.
5. They must have satisfactorily dissected one half of the body under the direction of a Demonstrator of Anatomy.
6. They must have paid all fees before the final examinations.

The final marks in all subjects are derived from work in the recitations, laboratory, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements from time to time, without further notice.

HONORS.

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*."

OUTLINE OF THE COURSE.

First Year.

Descriptive Anatomy.—Lectures, demonstrations, recitations, and dissecting. *Seven hours a week during the first semester.*

General Chemistry.—Lectures and required laboratory work. *Eleven hours a week during the first semester.*

Physiology.—Lectures, demonstrations, conferences, recitations, and experimental work in the laboratory. *Twelve hours a week during the second semester.*

Histology.—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the second semester.*

Hygiene.—Lectures on Personal Hygiene, *ten hours.*

Final examinations upon these subjects at the close of the first and second semesters, respectively, of the first year.

Second Year.

Pathology.—Lectures, demonstrations, and required laboratory work. *Twelve hours a week.*

Bacteriology.—Lectures and required laboratory work. *Five hours a week.*

Materia Medica and Therapeutics.—Lectures and recitations. *Four hours a week.*

Medical Chemistry and Toxicology. Lectures and required laboratory work. *Twelve hours a week.*

Final examinations upon these subjects are required at the close of the second year.

Bandaging and Apparatus.

Normal Auscultation and Percussion.

Third Year.

Theory and Practice of Medicine.—Lectures and recitations. *Four hours a week.*

Surgery.—Lectures and recitations. *Three hours a week.*

Obstetrics. including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

Abdominal Surgery and Gynaecology.—Lectures and recitations. *Three hours a week.*

Pediatrics.—*Six hours a week.*

Hygiene.—*One hour a week.*

Auscultation and Percussion.—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all of their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year.

Clinical Medicine, Clinical Surgery, Clinical Gynaecology, Ophthalmology, Otology, Neurology, Dermatology, Laryngology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine, Clinical Surgery, and two of the following subjects, which shall be elected by the student, together with a one-hour examination on each of the others :

Ophthalmology, Otology, Neurology, Dermatology, Laryngology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, Clinical Gynaecology, and Legal Medicine.

EXAMINATIONS.

There are two examinations held each year in the college building. They are in writing, and are held the week before the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of medicine.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 18, 1902.

Students who have failed twice in their examination upon a subject will not be admitted to a third examination without the payment of an extra examination-fee of five dollars.

The fall examinations for 1902-1903 will be held during the week commencing September 22, 1902.

Students are eligible for their examinations as follows: those of the first year at the close of the first year's course; those of the second year at the close of the second year's course, provided they have passed a majority of the first-year examinations; those of the third year at the close of the third year's course, provided they have passed all of the first-year and a majority of the second-year examinations; those of the fourth year at the close of the fourth year's course, provided they have passed all of the

first and second-year examinations, and a majority of those of the third year.

TEXT-BOOKS.

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Gerrish, Quain, Morris, Weisse, Holden, Haynes' Dissector.

Physiology.—American Text-book, Raymond, Foster, Verworn, Landois and Sterling, Porter, Chapman, Schäfer.

General Chemistry.—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Cooke's The New Chemistry.

Histology.—Syllabus, Böhm and Davidoff, Stohr.

Medical Chemistry.—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

Collateral Reading.—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

Materia Medica and Therapeutics.—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Kelmperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Clinical Gynaecology.—Kelly, Dudley, Greig-Smith.

Surgery.—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

Clinical and Operative Surgery.—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Jacobson's Surgical Operations, Zuckerkandyl's Operative Surgery, Treve's Manual of Operative Surgery, Da Costa.

Practice of Medicine.—Osler, Tyson, Thompson, Strümpell, Eichhorst, Ander's Practice of Medicine.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Da Costa's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Church and Peterson, Gower, Dana, Dercum.

Mental Diseases.—Chapin, Clouston, Peterson, Lewis, Dictionary of Psychological Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Bosworth, Shurley, Hall, Coakley, and Ballinger on Diseases of the Nose and Throat.

Diseases of the Rectum.—Kelsey's Surgery of the Rectum and Pelvis.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—De Schweinitz, Nettleship, Noyes.

Medical Dictionary.—Gould, Dunglison.

EXPENSES.

First Year.

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost.

Second Year.

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost

Third Year.

Matriculation	\$ 5.00
Tuition	120.00

Fourth Year,

Matriculation	\$ 5.00
Tuition	90.00
Graduation fee	30.00
Postgraduate fee for graduates of other schools .	120.00
Single course	30.00
Postgraduate fee for graduates of this school .	60.00
Single course	20.00

The fees are due and must be paid before November 1.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of any kind are settled.

The Bursar of the College will be at the school for the purpose of collecting fees, a notice of the days and hours having been previously posted on the Bulletin-board.

There are no scholarships connected with the school.

Students will be charged the fee of the class in which they are catalogued.

General Information.

LIBRARIES.

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than 15,000 books upon medical subjects.

SESSIONS OF THE SCHOOL.

The annual course of lectures, after the session of 1902-03, begins on the first Tuesday in October of each year, and continues until the last Wednesday in May.

The annual course of lectures for 1902-03 will commence Wednesday, October 1, 1902.

VACATIONS.

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

STANDING AND CERTIFICATES.

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the fourth year. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who intend entering the school are requested to write for an application-blank and forward it to the Secretary.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work done during his period of connection with the school.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled, and all students must fill out and deposit a registration blank before October 15th.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Medical School, Boston, Mass.

THE DENTAL SCHOOL
(FORMERLY THE BOSTON DENTAL COLLEGE)

Faculty of the Dental School.

- ELMER H. CAPEN, D.D., LL.D., PRESIDENT, Tufts College.
 HAROLD WILLIAMS, A.B., M.D., 528 Beacon Street, Boston.
DEAN, and Professor of the Principles and Practice of Medicine.
- CHARLES P. THAYER, A.M., M.D., Tufts College Dental
SECRETARY, and Professor of Anatomy. School, Boston.
- EDWARD W. BRANIGAN, D.D.S., 2 Commonwealth Ave., Boston.
Professor of Clinical Dentistry.
- FRANK G. WHEATLEY, A.M., M.D., North Abington.
Professor of Materia Medica and Therapeutics.
- CHARLES A. PITKIN, A.M., Ph.D., South Braintree.
Professor of Chemistry.
- GEORGE A. BATES, D.D.S., Auburndale.
Professor of Dental Histology.
- JOHN C. MUNRO, A.B., M.D., 173 Beacon St., Boston.
Professor of Surgery.
- FREDERICK M. HEMENWAY, D.D.S., Hotel Pelham, Boston.
Professor of Prosthetic Dentistry.
- TIMOTHY LEARY, M.D., Tufts College Medical School.
Professor of Pathology and Bacteriology.
- JOSEPH KING KNIGHT, D.D.S., Hyde Park.
Professor of Prosthodontia.
- HENRY J. BARNES, M.D., 429 Beacon St., Boston.
Professor of Hygiene.
- GEORGE V. N. DEARBORN, A.M., M.D., Ph.D.,
Assistant Professor of Physiology. 38 St. Botolph St., Boston.

OTHER INSTRUCTORS.

- WALTER I. BRIGHAM, D.D.S., South Framingham.
Lecturer on Operative Dentistry.
- BYRON H. STROUT, D.D.S., Taunton.
Lecturer on Operative Technics and Instructor in Anaesthesia.
- GEORGE C. AINSWORTH, D.D.S., 220 Clarendon St., Boston.
Instructor in Orthodontia.
- CHARLES D. KNOWLTON, M.D., 574 Warren St., Roxbury.
Instructor in Pathology and Bacteriology.

WILLIAM P. HOUSTON, D.D.S.,	419 Boylston St., Boston.
JOHN W. FORBES, D.D.S.,	419 Boylston St., Boston.
EDGAR O. KINSMAN, D.D.S.,	15 Brattle Sq., Cambridge.
KNUT J. LUTROPP, D.D.S.,	282 Columbus Ave., Boston.
HENRY H. PIPER, D.D.S.,	Winter Hill, Somerville.
WILLIAM RICE, D.D.S.,	153 Newbury St., Boston.
BURLEIGH C. GILBERT, D.D.S.,	Stoneham.
ERVIN A. JOHNSON, D.D.S.,	419 Boylston St., Boston.

Instructors in Clinical Dentistry.

FRED C. MERRILL, D.D.S.,	Wollaston.
WALTER F. WINCHESTER, D.D.S.,	372 Boylston St., Boston.
GEORGE A. MARSHALL, D.D.S.,	5 Bow St., Somerville.

Instructors in Prosthetic Dentistry.

EUGENE THAYER, A.M., M.D.,	2683 Washington St., Roxbury.
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Demonstrator of Anatomy.

JOHN I. FRENCH, M.D.,	Winchester.
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Instructor in Materia Medica and Therapeutics.

FREDERICK F. STRONG, M.D.,	178 Huntington Ave., Boston.
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Assistant in Pathology and Bacteriology.

OLGA CUSHING-LEARY, M.D.,	Cushing Hospital, Roxbury.
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Assistant in Pathology and Bacteriology.

I. E. ROSENSTEIN REID, M.D.,	Jamaica Plain.
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*Assistant Demonstrator of Anatomy.***Laboratory Assistants.**

ALONZO K. PAINE,	Hyannisport.
L. MARY-BELLE HOLT, B.L.,	Portland, Me.
HENRY HARRISON,	Ware.

Anatomy.

FLORENCE GILMAN,	So. Braintree.
FRANK A. MURPHY,	Taunton.
THOMAS W. MURPHY,	Lawrence.
LOUIS MODERNO,	Somerville.

General Chemistry.

JOHN V. GALLAGHER, A.B.,	Milford.
MARY E. GILL,	Brookline.
FRANK H. McELROY,	Providence, R. I.

Pathology and Bacteriology.

LEWIS W. PEASE,	Weymouth.
WILLIAM L. RIPLEY,	Newton.
HORACE C. SWAN,	Boston.
FREEMAN A. TOWER,	Sterling Junction.
MARGARET E. CARLEY,	Boston.

Physiology.

JOHN A. WHITTLE,
GEORGE W. DERRICK,
GUY F. BRAGDON,
Histology.

Wakefield.
Cambridgeport.
Boston.

Bursar.

HERBERT T. BROWN,

Tufts College.

The Dental School.

The Tufts College Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of Legislature. It was incorporated under its former name in 1868. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former Board of Trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of nine months each. In 1902-1903 the course will be extended to four years. The studies of the first year, and a part of those of the second year, except for practical work in the infirmary, are carried on in connection with the Medical School.

Instruction is given by means of lectures, demonstrations, laboratory work, and recitations in Anatomy, Physiology, Histology, Chemistry, Hygiene, Materia Medica, Pathology, Therapeutics, Bacteriology, Principles of Surgery, Practice of Dental Medicine, Oral Surgery, and in Operative, Clinical, and Prosthetic Dentistry, Orthodontia, and Dental Technics.

The Infirmary, under the direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes ample opportunity for the personal study of Oral Surgery as well as of Dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with abundant facilities for every variety of dental work.

Each student is required before graduation to present satisfactory specimens of the different forms of mechanical work made at the School under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has been from the beginning to give its students such a course of instruction as shall enable them to graduate as well-trained practical dentists. It is a fact which needs no emphasis that no amount of didactic instruction or clinical teaching will take the place of actual practice under competent supervision. Attention, therefore, is called to the fact that the matriculate, from the moment he enters the school, is under the supervision of a professor and his demonstrators, who are in daily attendance at the Infirmary. The intimate daily relationship thus established between professor and pupil continues throughout the course and produces its legitimate result. But while the practical side of the training is thus emphasized, an effort is made to educate the student in the fundamental branches of medical and dental science, and to awaken in him a taste for study and research, as well as for the cultivation of those higher branches which render dentistry a profession instead of an art.

The Library of the College contains many medical and dental books and periodicals. It is being constantly enlarged, with the aim of adding the new and important books in the various departments, as they are issued. The library is open for reference, and books are loaned to students. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city. Numerous operations upon the face and oral cavity are performed before students on public operating-days. The Boston City Hospital is but ten minutes' walk from the College, and the Massachusetts General Hospital can be reached by the Belt Line cars.

THE NEW BUILDING.

Owing to the rapid growth of the Medical and Dental Departments of the College it was found necessary to provide increased laboratory facilities. Accordingly in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. This new building is now completed and occupied. It is constructed of Jonesport red granite and brick with terra cotta trimmings. It was designed by Mr. J. Phillip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the Board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated, and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new Dental Infirmary, which occupies the first floor of the Dental wing. This room, 125 x 29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new Infirmary is among the best equipped and most complete dental infirmaries in this country. The Prosthetic Department, which corresponds in size to the Infirmary, is equipped in the most approved modern fashion. Electric power is supplied for the latter. The building may be reached by any Huntington avenue car with the exception of those of the Cross Town and Cambridge Lines.

INFIRMARY AND LABORATORY.

In the Clinical and Mechanical Departments instruction is given daily, from 9.30 A.M. to 1 P.M. Last year nearly 30,000 treatments were made.

Materials used in the Clinical Department are furnished by the School.

HOSPITALS.

The infirmary opens on the Monday of the week previous to the first Wednesday in October, and closes the second Wednesday in June.

The lectures commence the first Wednesday in October, and continue until the close of the session.

Students have admission to the Massachusetts General, the City, and the United States Marine Hospital, where opportunities are offered for observing surgical operations.

Course of Instruction.

DENTAL SCIENCE AND OPERATIVE DENTISTRY.

The instruction in Dental Science and Operative Dentistry is both didactic and practical. The professor and other instructors endeavor to demonstrate all approved methods of performing operations upon the teeth and surrounding tissues.

The origin and treatment of decay, the materials for filling teeth, and the most improved instruments and appliances used in operating upon the teeth are discussed. Frequent clinics are held at the Infirmary, and every available means is employed to make the students practically acquainted with this important branch of dental science.

CLINICAL DENTISTRY.

The method of instruction in Clinical Dentistry is by clinical lectures to the students of each class, accompanied

by practical demonstration of the various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical Operative Dentistry is furnished in this department: the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA.

The course of instruction in Prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course for the Freshman class in making and tempering instruments. Particular attention is given to the practical manipulation of vulcanite, celluloid, aluminum, and cast metal for dentures: to gold plate work and the application of continuous gum to platina; to the manufacture of porcelain teeth in single and block forms; and to crown and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

ORTHODONTIA.

The most important part of the course in Orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Effort will be made to familiarize the student with the best and latest methods.

DENTAL TECHNICS.*

A well-lighted and convenient room has recently been fitted for the use of the class in Operative Technics. Instruction is given in this department, both by lectures from

*NOTE.—The operations in the Technical Department require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

the instructor in charge, illustrated by models and by practical work on the part of the students. The practical work will include the study of the forms of teeth, with carvings in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of opening and filling pulp canals, with operations on natural teeth; also proper methods of forming cavities for filling, and the manipulation of filling materials.

THEORY AND PRACTICE OF MEDICINE.

The course in the Theory and Practice of Medicine consists of a series of lectures given to the dental students by members of the Faculty of the Medical School. It is intended to include such subjects as general Infectious and Contagious Diseases; Syphilis; Stomatitis and Tonsillitis; Diseases of the Heart, Kidneys, and Skin; Neuralgia and Neurasthenia; Disorders of the Alimentary Tract; Pregnancy; Tuberculosis. Lectures upon Legal Medicine will be given. It is believed that a course of this description will be of practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Webber, Otis, Austin, Arnold, White, Stowell, and Howe, of the Medical School, will contribute to this series of lectures.

ORAL SURGERY.

It is the intention in this department to afford instruction, not only in local affections which are found in the tissues about the oral cavity, but also to acquaint the student with such subjects in general surgery as have even remote connection with Oral and Dental Surgery. The lectures are supplemented by frequent clinics, both at the Infirmary and at the Boston City Hospital. The use of anaesthetics is exemplified in the weekly clinics for extrac-

tion and in the hospital service of the Professor of Surgery.

ANATOMY.

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in this subject will consist of lectures, recitations, and practical work in the dissecting-room. The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected. The course is identical with that given the medical students, and is taken with them. An ample supply of anatomical material is always obtainable.

CHEMISTRY.

The course in Chemistry is divided into two parts. During the first half of the first year it is the same as is given to students of the Medical School. There are five lectures and recitations each week, with six hours of work in the laboratory, including Descriptive Chemistry, Qualitative Analysis, and so much of Theoretical Chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in Chemistry is followed by lectures, recitations, and laboratory work in Dental Chemistry. The metals, with their alloys and salts as used in dentistry, the bones and teeth, the saliva and the chemistry of the mouth are carefully studied.

PHYSIOLOGY.

The instruction in Physiology for the students of dentistry is identical with that presented to the students of

medicine. The course is given throughout the latter half of the first year. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being placed upon the human bodily functions. The lectures set forth the principles of General Physiology, and suggest some of its relations to the allied sciences, especially Anatomy. In the laboratory, the student has opportunity to acquire a degree of skill in the use of physiological apparatus, demonstrating for himself meanwhile some of the most important facts of the science. The conferences give volunteers opportunity to become familiar with the literature of interesting topics, which are then presented briefly in written reports, and freely discussed by the class.

HISTOLOGY.

The subject of Histology covers the second half of the first year. The course during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the course covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental Histology will be given during the Junior year. Particular attention will be given, in this course, to the study of the minute anatomy of the tooth. The development of the teeth will receive careful treatment. Such adequate knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

MATERIA MEDICA AND THERAPEUTICS.

See the departments of the Medical School, page 199.

HYGIENE.

A course in personal hygiene is given to the students of the Freshman Class. This course is given in conjunction with that given to the first-year class of the Medical School, and is intended to provide the students, often for the first time away from home, with a knowledge of the laws of health, thus securing right living and the prevention of disease.

PATHOLOGY.

The course in Pathology will consist of lectures, recitations, and demonstrations. The subject of General Pathology will be thoroughly covered, and the Special Pathology of the mouth, and of the respiratory and intestinal tracts will be given special attention. The work will include microscopical as well as gross demonstrations.

BACTERIOLOGY.

Instruction in Bacteriology will consist of lectures, demonstrations, and laboratory work. The course will include a study of the growth and modes of action of bacteria. Special attention will be paid to those organisms which are found in the mouth. In connection with the pathology of suppuration and dental caries, the organisms responsible for these conditions will be studied in their relations.

ANAESTHESIA AND EXTRACTION.

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth and the performance of the simpler operations in surgery. Ample waiting rooms are adjacent and also rooms for the care of patients after anaesthesia. Administrations of nitrous oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

CLINICAL CONFERENCE.

Each Clinical Conference consists in the reading of the written report of an actual case by a student of the Senior

Class, at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is finally discussed by the members of the class and by the Professor in charge.

Requirements.

FOR ADMISSION.

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English. A composition of two hundred words upon some subject of general interest ; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subjects for this examination in 1901-1902 will be chosen from the following :—

(1) Prescott's "Conquest of Mexico ;" (2) Thackeray's Henry Esmond ; (3) Burke's Speech on Conciliation with America.

(b) Arithmetic ; such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, ratio and proportion.

(c) Algebra ; such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(d) Plane Geometry.

(e) Physics ; such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(f) Latin ; an examination upon such elementary work as is usually included in one year of study ; as, for example, the first fifteen chapters of Cæsar's Commenta-

ries, and the translation into Latin of easy English sentences involving the same vocabulary. Students who fail in one or more of these subjects may be admitted, subject to condition ; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

The candidates are required to make a general average of at least 75 per cent.

Exceptions : graduates from a high school, a college, a university, or institution of similar grade ; students holding certificates of entrance to a college or a university ; students holding the Regents' certificate of the state of New York ; and graduates of certain college preparatory schools, may be admitted without examination. The institutions, however, issuing these certificates, must be accredited as standard by the community within which they are located.

FOR ADVANCED STANDING.

Students who have taken courses in other accredited Dental Schools are admitted to the Junior or Senior class upon presenting satisfactory evidence that they have passed the examinations of the class they desire to enter.

FOR PROMOTION.

Students who have passed a majority of the examinations of the first-year class and all entrance conditions may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class ; but no student will be promoted to the fourth-year class who has not passed all of the first and second-year examinations and a majority of those of the third year.

FOR GRADUATION.

Candidates for the degree of Doctor of Dental Medicine after the session of 1903-1904 must have fulfilled the following requirements :—

1. They must have presented a certificate that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of lectures in some accredited Dental College, the last of which shall have been at this School, and no two courses in the same twelve months.
3. They must have passed all the examinations required, and have satisfied the Professors of Operative and Prosthetic Dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course under the supervision of the Prosthetic department.
4. They must have dissected under the direction of the Demonstrator of Anatomy.
5. They must have paid all fees before the final examinations.

EXAMINATIONS.

There are two examinations held each year in the school building. They are in writing, and are held at the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of dentistry.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation. The entrance examinations will be held at 10 A.M. on the second Monday in June and on the Tuesday before the commencement of lectures.

All students who intend taking any of the examinations must register their names with the Secretary on or before a date to be announced upon the bulletin.

Students who have failed twice in their examinations upon a subject will not be admitted to a third examination

without the payment of an extra examination fee of five dollars.

DIVISION OF STUDIES.

Freshman Year.—Anatomy, Physiology, General Chemistry, Histology, Operative Technics, with final examinations at close of the year; Operative and Prosthetic Dentistry, with examinations for progress at close of the session.

Junior Year. Materia Medica and Therapeutics, Dental Chemistry, Pathology and Bacteriology, with final examination at close of the session: Orthodontia; Operative, Clinical, and Prosthetic Dentistry, with examinations for progress at close of the session.

Senior Year. Practice of Dental Medicine, Anaesthesia and Oral Surgery, Orthodontia; Operative, Clinical, and Prosthetic Dentistry, with final examinations in all the studies at the close of the session.

PROPOSED FOUR-YEAR COURSE. *

For students entering the school in 1902 and thereafter the course will be extended over four years. The four-year course as at present proposed is as follows:

First Year. Anatomy, Histology, Embryology, Physiology, General Chemistry, Qualitative Analysis, Personal Hygiene.

Second Year. Morning hours at the Dental School, 9.30 to 12.30: Infirmary, Prosthetic Laboratory, and Operative Technics. Afternoons: Materia Medica and Therapeutics, Dental Chemistry, Dental Histology, Operative Dentistry, Prosthetic Dentistry, Normal Auscultation and Percussion.

Third Year. Morning hours at Dental School Infirmary and the Prosthetic Laboratory.

Afternoons: Prosthetic Dentistry, Operative Dentistry and Clinic, Orthodontia, Hygiene, Surgery, Pathology and Bacteriology.

Fourth Year. Morning hours at the Dental School, 9.30 to 12.30: Infirmary and Prosthetic Laboratory, including practical anaesthesia and extraction; Clinical Surgery at the Hospital.

Afternoons: Operative Dentistry, Prosthetic Dentistry, Orthodontia, Crown and Bridge Work, Theory and Practice of Dental Medicine, Clinical Conferences in Operative and Prosthetic Dentistry.

* This proposed course is subject to change.

TEXT-BOOKS.

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy. Gray, Gerrish, Weisse, Quain, Morris, Black's Dental Anatomy.

Physiology. American Text Book, Foster, Raymond, Schäfer, Porter, Verworn.

Pathology. Syllabus, Miller's Micro-organisms of the Human Mouth, Burchard's Dental Pathology.

Materia Medica. Shoemaker (4th edition), Bruce, White, Bartholow (8th edition).

Therapeutics. Cushing, Bartholow, Wood, Hare, United States Dispensatory, Gerrish's Prescription Writing.

Practice of Surgery. Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry. Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Dental Histology and Microscopy. Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Prosthetic Dentistry. Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Chemistry. Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Bacteriology. Abbott, Woodhead, Sternberg.

Medical Dictionary. Dunglison.

EXPENSES.

First Year.

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost.

Second Year.

Matriculation	\$ 5.00
Tuition	120.00
Dissecting	At cost.

Third Year.

Matriculation	\$5.00
Tuition	120.00

Fourth Year.

Matriculation	\$ 5.00
Tuition	90.00
Graduation Fee	30.00
Postgraduate fee for graduates of other schools .	120.00
Single course	30.00
Postgraduate fee for graduates of this school .	60.00
Single course	20.00

Payment in full must be made at the commencement of the term. The College Bursar will be in regular attendance at the school for the purpose of collecting fees, a notice of the days and hours having been previously posted upon the bulletin.

No degree will be conferred until the Bursar certifies that all fees have been settled.

There are no free scholarships connected with the school.

In accordance with his means, the student's general expenses can be brought to the standard which prevails in other cities. A list is kept of boarding-houses in the vicinity of the school building, varying in rate of charge from four dollars a week upwards.

General Information.

SESSIONS.

There is but one yearly session of the school. No exercises are held at the school during the evening.

There are no exercises at the school during three days at Thanksgiving and the weeks of Christmas and Easter,

nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

This School is a member of the National Association of Dental Faculties, and conforms to its rules as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

APPLICATIONS.

Students intending joining the School for the first time may obtain from the Secretary an application blank, which they are required to fill out and return to the Secretary.

REGISTRATION.

Upon arrival at the School, students must present the credentials of their previous education, fill out the registration blank, and deposit it with the Secretary. The registration blank is required yearly of all students.

ENTRANCE EXAMINATIONS.

For the session of 1902-1903 entrance examinations will be held at the school on Monday, June 9th, 1902, and Tuesday, September 30th, 1902. Students conditioned in their entrance requirements must remove their conditions upon those dates.

The session for 1902-1903 will commence on Wednesday, October 1st.

Requests for the annual announcement and all other communications relating to the business of the school should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.

**THE BROMFIELD-PEARSON
SCHOOL**

The Bromfield-Pearson School.

BOARD OF INSTRUCTION.

ELMER H. CAPEN, D.D., PRESIDENT.

GARDNER C. ANTHONY, A.M.,

DEAN, *and Professor of Technical Drawing.*

GEORGE FRANCIS ASHLEY,

Assistant in Drawing and Instructor in Mathematics.

EDWIN ADAMS SHAW, B.S.,

Instructor in Mathematics.

SAMUEL C. EARLE, A.M.,

Instructor in French and English.

CHARLES H. CHASE, S.B.,

Superintendent of Shops.

BROMFIELD-PEARSON SCHOOL.

The Bromfield-Pearson School.

The Bromfield-Pearson School provides special courses of technical instruction for those who are qualified by previous education and maturity of mind to prepare for any of the Engineering Courses of Tufts College in one year, or to continue with equal advantage the special two-years' course of the school.

The first year may be taken as preparatory, either to the Engineering Departments of the College, or to the technical course of the School. The course for the second year is arranged to meet the wants of those who are unable to continue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes Elementary Mathematics, Mechanics, and Technical Drafting.

ADVANTAGES TO BE DERIVED FROM THE COURSE.

Students who take the preparatory course, and complete the work satisfactorily, will be admitted to the College on certificate.

Except in the elementary instruction in Mathematics and English, the courses offered are, in most respects, identical with those of the College. Consequently, students who are partially prepared to enter the College may do advanced work in anticipation of their engineering studies, and thus shorten their college course.

Students who take the two-years' course, and later decide to enter the College, will receive full credit from the College for all work satisfactorily performed which is equivalent to that required in the Engineering Department.

The association with college work and college men

places the student in better position to pursue his advanced studies.

The Gymnasium, Library, laboratories, and lecture-courses of the College are open to students of the School.

The mechanical equipment of the School is such as to afford exceptional opportunities for taking the practical courses in Carpentry, Moulding, Pattern Work, Forging, and Machine Work.

THE BUILDING.

The Bromfield-Pearson Building is a three-story building, 100 by 50 feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the School, and for the use of the department of drawing and shop-work in the College. One room is set apart as a study for such of the students as do not room at the College. For a fuller description of the building, see page 147.

Course of Study.

FIRST YEAR.

Preparatory Course.

Algebra (Academic) will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

Geometry. The course comprises plane geometry and all of solid geometry, including spherical.

Plane Trigonometry may be taken during the fourth quarter.

English Grammar and Composition is pursued throughout the year. **French** for the entire year is required of those who are preparing for a college course. Special students may elect French.

Drawing (Freehand) comprises the work required for entrance to the College.

Drawing (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the

work in Freehand Drawing are identical with the college work in the same subjects, and all, or a part of these, may be omitted by students fitting for college.

Descriptive Geometry may be taken by such students as are sufficiently prepared to enter the college class. This subject is pursued during the second term, and is required of those taking the two-years' course.

Shopwork is elective, and may be taken at any time when it will not interfere with required work.

Electives.

Those who are sufficiently prepared in any of the studies named above may elect more advanced subjects, as follows:—

Preparation in elementary algebra, as indicated above, will admit to the course in college algebra.

Preparation in elementary algebra, together with plane and solid geometry, will admit to Freshman mathematics.

As the instruction in drawing is largely individual, the student may take the grade for which he is prepared.

Shopwork may be taken at any time when it will not interfere with required work.

SECOND YEAR.

Special Engineering Course.

The Second Year is intended only for those who do not enter the Engineering Department of the College. Students will, however, be admitted to college classes for which they may be fitted.

Advanced Algebra and Trigonometry are pursued with the college classes during the first term.

Analytical Geometry is taken during the second term.

Calculus is studied during the second term. This subject is elementary, and is designed to give the student such a knowledge of the practical use of the Calculus as shall enable him to read, in an intelligent manner, books involving its use.

Mechanics involves the use of an elementary treatise, including the subject of Graphic Statics.

Machine Drawing. The work in Machine Drawing is conducted as in a well-organized drafting-room. It consists largely of free-hand sketches and plainly finished drawings, made according to approved systems.

Mechanism. Under the head of Mechanism, cams, gearing, links, and other mechanical motions are treated, and much stress is laid on the practical application of principles.

Machine Design is begun as soon as the student has become profic-

ient in the preceding subjects, and has acquired neatness, accuracy, and rapidity of execution.

Steam Engine. A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of VALVE GEARS is considered at this time. The student is also taught to apply the INDICATOR, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

Moulding. A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns.

Electives.

The following subjects may be pursued in connection with the foregoing, when time and previous preparation will permit:—

Pattern Making. The work in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding.

Forging. In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, upsetting, welding, tempering, and case-hardening.

Machine Work. Vise work in iron includes surface chipping, squaring and fitting, key-seating, scraping, and polishing. The machine practice consists not only in turning, planing, drilling, boring, and milling operations, but in the careful study of the machines, their efficiency, and capabilities.

Physics. (See page 84).

Chemistry. Instruction in Chemistry is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, cover the ground of theoretical and descriptive inorganic chemistry. Students are charged for breakage, and four dollars a term for materials used.

General Information.

REQUIREMENTS FOR ADMISSION.

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they

may elect. This may be done by certificate from a school previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations, either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

REGULATIONS OF THE SCHOOL.

Students are subject to the rules governing students of the College.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon. Any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular college courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Certificates of proficiency are given the special Engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before the 5th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons at \$3.50 per week; in private families at \$3.50 to \$5.00 for table board, and \$1.50

to \$2.00 for furnished room. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses :—

Tuition	\$120.00	\$120.00
Half-room rent	15.00	75.00
Board, \$3.50 to \$4.50 a week (36 weeks)	126.00	162.00
Physical training		10.00
Books, instruments, and supplies . . .	15.00	25.00
		<hr/>
Total	\$276.00	\$392.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

THE SUMMER SCHOOLS

The Summer Schools.

THE SUMMER SCHOOL OF CHEMISTRY.

Instructors.

- FRANK W. DURKEE, A.M.,
Director, and Professor of Inorganic Chemistry.
- VIRGIL L. LEIGHTON, A.M., PH.D.,
Instructor in Organic Chemistry.
- FRANK G. WREN, A.M.,
Assistant Professor of Mathematics.

THE HARPSWELL LABORATORY.

Instructors.

- J. STERLING KINGSLEY, S.D.,
Director, and Professor of Biology.
- FRED D. LAMBERT, PH.D.,
Assistant, and Instructor in Natural History.

The Summer Schools.

THE SUMMER SCHOOL OF CHEMISTRY.

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In the summer of 1900, classes in Mathematics and English were added. Six of the regular college subjects in Chemistry, numbered 1, 2, 3, 4, 5, and 10 (see pages 87 and 88), are regularly taught. Each subject has allotted to it the same number of lecture and laboratory periods as are provided in the regular college curriculum. When satisfactorily completed, the term hours which the subjects represent can be counted toward the number required for a degree. Subjects 1, 4, and 5 represent six term hours each, and 2, 3, and 10, three term hours each. Applicants for admission to the College in the autumn who wish to offer Chemistry for an entrance credit can do the required work in the school, if not previously prepared for an examination. The school, furthermore, provides an opportunity for teachers in secondary schools to obtain a teaching knowledge of general inorganic chemistry, as well as an elementary knowledge of organic chemistry, and to carry forward the study of chemical analysis.

In Mathematics, the courses given in the session of 1901 were equivalent to the subjects numbered 1, 3, and 7.

The sessions of the school have been held in the Chemical Building of the College, which is well equipped with lecture-room, laboratories, and modern apparatus for all kinds of chemical work, and in the building of the Bromfield-Pearson School.

EXPENSES.

Tuition for Chemistry 1, twenty dollars; for Chemistry 2 and 3, twenty dollars; or twelve dollars for one of the

two subjects; Chemistry 4 and 5, twenty dollars each; Chemistry 10, fifteen dollars. The cost of the chemicals for each of the subjects 1, 4, and 5 is eight dollars, and four dollars each for 2, 3, and 10. Breakage depends entirely upon the care of the student, and averages about four dollars in each of the longer courses. The fee for instruction in Mathematics is fifteen dollars for a three-hour subject. Board and furnished rooms can be obtained for \$6 a week, and board for \$3.50 a week. Tuition and cost of chemicals must be paid on the first day of the term. For a list of students in the Summer School of Chemistry in the summer of 1901, see the Register of Students.

All inquiries concerning the Summer School of Chemistry should be addressed to PROFESSOR F. W. DURKEE, Tufts College, Mass.

THE HARPSWELL LABORATORY.

The Summer School of Biology was established in 1898.

In 1901 the college erected a small laboratory for the study of marine biology at South Harpswell, Maine, on the shore of Casco Bay. It is equipped with boats, glassware, reagents, and apparatus for study on the lines of anatomy and embryology. There is also a small library of the most important works. The location is admirably adapted for biological research, since the fauna is extremely rich, while the climate is cool.

The laboratory will be open in 1902 from June 20 until the middle of September. Four courses of instruction will be offered: (1) Invertebrate Zoology; (2) Vertebrate Zoology; (3) Botany; (4) Beginning Investigation. For each of these courses, which open on July 2 and continue six weeks, a fee of twenty dollars will be charged, and credit will be given for work completed as if the courses had been taken at the College. Besides, there will be opportunity for a limited number of research students, the fee for these being from ten to twenty dollars, according to the accommodations.

For a list of those who worked in the Harpswell Laboratory in the summer of 1901, see the Register of Students.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length. It has several hotels and boarding houses, where board and rooms may be had at five dollars a week and upward. All inquiries concerning the Harpswell Laboratory should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

REGISTER OF STUDENTS

GRADUATE DEPARTMENT.

[The right-hand column contains the college residence of every student having such residence, the neighboring cities of Somerville and Medford being thus included. The middle column records the home address.]

Fellows.

- RICHARDS, RALPH W., *Waterville, Me.* Emery St.
A.B., Colby, 1901. Miner Fellow in Natural History. First
year. Biology.
- RUDDICK, WILLIAM HENDERSON, *502 E. Broadway, S. Boston.*
M.D., Harvard, 1868. B.A.S., Harvard, 1881. Fellow by
courtesy in Natural History. Biology.

Resident Students.

- HODGE, EDITH LOUISE, *Franklin.*
A.B., 1897. First year. English.
- LAMB, ARTHUR BECKETT, *Attleboro.* Dean Hall, 6
A.B., 1900; A.M., 1900. Third year. Chemistry.
- PARADISE, FRANK ILSLEY, *Medford.* 185 High St.
A.B., Yale, 1888. First year. History.
- TOUSEY, COLEMAN, *Tufts College.* West Hall, 19
A.B., 1898; D.D.S., Harvard, 1901. First year. Biology.

Non-Resident Student.

- GRAVES, CHARLES BROWN, *Marblehead.*
B.S., 1897. First year. Electrical Engineering.

COURSES IN ARTS AND SCIENCES.

[In the following list the course pursued by each student is indicated by the italic letters immediately following the name. The abbreviations are as follows course leading to the degree of A.B., *a b*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and Medical Preparatory, *mp*.]

Senior Class.

Allison, Irnie Emma, <i>ph</i>	<i>Cherokee, Ia.</i>	Metcalf Hall, 12
Armstrong, Roger Wellington, <i>e</i>	<i>Waltham</i>	Dean Hall, 9
Austin, William Willis, <i>ee</i>	<i>Salem</i>	Δ T House
Bailey, Dana Clark, <i>a b</i>	<i>Cumberland Mills, Me.</i>	West Hall, 19
Baker, Clair Lincoln, <i>ch</i>	<i>Wollaston</i>	Θ Δ X House
Brade, William Abram, <i>a b</i>	<i>Tufts College</i>	West Hall, 32
Burke, Josephine Rosamond, <i>a b</i>	<i>157 Albion St., Somerville</i>	
Capen, Ruth Paul, <i>a b</i>	<i>8 Professors Row, Tufts College</i>	
Coolidge, Richard Bradford, <i>a b</i>	<i>Woodfords, Me.</i>	Θ Δ X House
Dame, Ruth Burleigh, <i>a b</i>	<i>Hastings Lane, Medford</i>	
Danforth, Charles Warren, <i>ch</i>	<i>Tyngsboro</i>	East Hall, 2
Danforth, Joseph Dexter, <i>a b</i>	<i>Tyngsboro</i>	East Hall, 3
Endicott, Winthrop Tingley, <i>ee</i>	<i>Chelsea</i>	Δ T House
Fox, Carrie Edwards, <i>a b</i>	<i>123 College Ave., W. Somerville</i>	
Holmes, Isabel, <i>a b</i>	<i>Kingston, N. Y.</i>	Metcalf Hall, 10
Hussey, Harry Brigham, <i>ee</i>	<i>Hudson</i>	West Hall, 29
Johnson, Edna Henderson, <i>a b</i>	<i>Spencer</i>	Metcalf Hall, 13
Knight, Mabel Frances, <i>a b</i>	<i>Everett</i>	Allen House
Lovell, Sarah Emily, <i>a b</i>	<i>Wayland</i>	
Lunt, Forrest Sumner, <i>a b</i>	<i>Somerville</i>	A T Ω House
Lyon, Blanche Elizabeth, <i>a b</i>	<i>392 Broadway, Somerville</i>	
McCoy, Agnes Irene, <i>a b</i>	<i>62 Main St., Somerville</i>	
Manchester, Albert Everett, <i>me</i>	<i>Providence, R. I.</i>	West Hall, 29
Mills, Nathaniel Child, <i>ee</i>	<i>Douglass</i>	East Hall, 1
Morley, Herbert Morley, <i>ee</i>	<i>Newton Centre</i>	East Hall, 19
Morse, Arthur Henry, <i>a b</i>	<i>Salem</i>	Δ T House
Paine, Alice Cecile, <i>ph</i>	<i>Hyde Park</i>	Start House, 6
Parker, Laurence Houghton, <i>a b</i>	<i>Newtonville</i>	Δ T House
Parker, Mary Bates, <i>a b</i>	<i>Everett</i>	Allen House
Paterson, Fred William, <i>ee</i>	<i>Portsmouth, N. H.</i>	Dean Hall 5
Paul, Emma Franklin, <i>a b</i>	<i>23 Monmouth St., Somerville</i>	
Peirce, Herbert Russell, <i>ph</i>	<i>27 Appleton St., Arlington Heights</i>	
Rallion, Harriet Elizabeth, <i>a b</i>	<i>Norwich, Conn.</i>	Metcalf Hall, 10
Ramsay, Helen Mabel, <i>a b</i>	<i>Fall River</i>	Metcalf Hall, 8

Roberts, Blanche Ethel, <i>a b</i>	<i>Malden</i>	Metcalf Hall, 9
Rogers, Bernice Gertrude, <i>a b</i>	<i>Belfast, Me.</i>	Start House, 7
Russell, Elizabeth Adams, <i>a b</i>	<i>182 Cambridge St., Winchester</i>	
Schneck, Emil Munger, <i>c e</i>	<i>Griswoldville</i>	East Hall, 2
Schoolfield, Harrison Herbert, <i>e e</i>	<i>Tufts College</i>	East Hall, 19
Shute, Henry Martin, <i>a b</i>	<i>Salem</i>	Δ T House
Sturtevant, Malcolm Eben, <i>a b</i>	<i>Somerville</i>	East Hall, 34
Tarr, Forrest Elliott, <i>c e</i>	<i>Marblehead</i>	A T Ω House
Titus, Marian Lucy, <i>a b</i>	<i>10 Raymond Ave., W. Somerville</i>	
Watkins, Florice Alison, <i>a b</i>	<i>So. Manchester, Conn.</i>	Metcalf Hall, C
Woodbridge, Arthur Gerry, <i>a b</i>	<i>Medford</i>	Z Ψ House

Junior Class.

Bixby, Herbert Dallas, <i>ph</i>	<i>Lowell</i>	A T Ω House
Bruce, Blanche Louise, <i>a b</i>	<i>120 Curtis St., W. Somerville</i>	
Bursch, Clare Louise, <i>ph</i>	<i>Hyde Park</i>	Metcalf Hall, 1
Bush, Edith Linwood, <i>a b</i>	<i>Chelsea</i>	Metcalf Hall, 4
Cannell, Winburn Scott, <i>a b</i>	<i>Bridgton, Me.</i>	85 Jenny Lind Ave.
Coolidge, Arthur William, <i>a b</i>	<i>Portland, Me.</i>	West Hall, 27
Coombs, Isabel Hall, <i>a b</i>	<i>Stoneham</i>	Metcalf Hall, 7
Cooper, Ashton B, <i>e e</i>	<i>Bloomfield, Ont.</i>	Z Ψ House
Dame, Olive Arnold, <i>a b</i>	<i>Hastings Lane, Medford</i>	
Farnsworth, Louise Melinda, <i>a b</i>	<i>Natick</i>	Metcalf Hall, 3
Fisher, Gertrude Isabelle, <i>a b</i>	<i>Fitchburg</i>	Metcalf Hall, 6
Friend, Edna Mary, <i>a b</i>	<i>33 Wallace St., W. Somerville</i>	
Gibbs, Julia Frances, <i>a b</i>	<i>51 Harris St., Waltham</i>	
Hayden, Philip Meserve, <i>a b</i>	<i>Augusta, Me.</i>	Δ T House
Hersey, Harry Adams, <i>a b</i>	<i>Dorchester</i>	West Hall, 3
Hixon, Beulah Sinclair, <i>a b</i>	<i>Chelsea</i>	Metcalf Hall, 16
Kingsley, Mary Winship, <i>a b</i>	<i>128 Professors Row, Tufts College</i>	
Knight, Thomas Sawyer, <i>e e</i>	<i>114 Professors Row, Tufts College</i>	
Lauriat, Leonard, <i>e e</i>	<i>8 Oakland St., Medford</i>	
Linscott, Harry DeLuce, <i>ph</i>	<i>No. Woburn</i>	East Hall, 4
Littlefield, Ethel Frances, <i>a b</i>	<i>Braintree</i>	Allen House
Lowell, Charlotte Raymond, <i>a b</i>	<i>37 Harvard St., Somerville</i>	
Lyons, Lena Abbie, <i>a b</i>	<i>Bradford</i>	Metcalf Hall, 3
Marion, Guy Elwood, <i>a b</i>	<i>Woburn</i>	A T Ω House
Merritt, Harry Tirrell, <i>ph</i>	<i>So. Weymouth</i>	East Hall, 4
Moore, Ethel Almira, <i>a b</i>	<i>37 Madison Ave., Somerville</i>	
Moors, Charles Ernest, <i>a b</i>	<i>Marlboro</i>	Θ Δ X House
Moulton, Oren McKenney, <i>c e</i>	<i>So. Gorham, Me.</i>	15 Curtis Ave.
Murphy, Arthur Jr., <i>ch</i>	<i>Wollaston</i>	Z Ψ House
Nason, Robert Edward, <i>a b</i>	<i>Jamaica Plain</i>	West Hall, 27

Page, Harry Stanley, <i>e e</i>	<i>Mountain Ave., No. Woburn</i>	
Price, Lawrence Marsden, <i>a b</i>	<i>Tufts College</i>	ΔT House
Puffer, Ethyl Winnifred, <i>a b</i>	<i>Tufts College</i>	Start House
Ryan, Olive Katharine, <i>a b</i>	<i>274 School St., Waltham</i>	
Shaw, Ellen Eddy, <i>bi</i>	<i>14 South St., Woburn</i>	
Story, Chester Bradstreet, <i>ph</i>	<i>Uxbridge</i>	East Hall, 7
Towle, Walter Volney, <i>ph</i>	<i>New York City</i>	$\Delta T \Delta$ House
Wood, Chandler Mason, <i>a b</i>	<i>Fort Plain, N. Y.</i>	Dean Hall, 5

Sophomore Class.

Barnett, Stella May, <i>a b</i>	<i>No. Attleboro</i>	Metcalf Hall, 2
Bearce, Clarence Prescott, <i>ch</i>	<i>W. Medford</i>	$\Theta \Delta X$ House
Berry, Charles Franklin, Jr., <i>a b</i>	<i>Mattapan</i>	West Hall, 21
Bond, Alfred Moore, <i>e e</i>	<i>Roxbury</i>	Dean Hall, 11
Bray, Bertha, <i>a b</i>	<i>98 Professors Row, Tufts College</i>	
Bray, Compton Durlin, <i>a b</i>	<i>98 Professors Row, Tufts College</i>	
Burnell, William Victor, <i>e e</i>	<i>Medford Hillside</i>	West Hall, 18
Burton, Arthur Wentworth <i>e e</i>	<i>48 Trowbridge St., Cambridge</i>	
Chism, James Whiton, <i>e e</i>	<i>Westford, Conn.</i>	East Hall, 27
Clark, Alice Wellington, <i>a b</i>	<i>Waltham</i>	Start House, 4
Clark, Alvar Warren, <i>a b</i>	<i>167 College Ave., W. Somerville.</i>	
Clark, Georgiana Marie, <i>a b</i>	<i>60 Central St., Somerville</i>	
Clifford, John William, <i>ph</i>	<i>Naugutuck, Ct.</i>	28 Professors Row
Countway, Gussanda, <i>a b</i>	<i>28 Robinson St., Somerville</i>	
Creeley, Oscar Slade, <i>sc</i>	<i>Belmont</i>	$A T \Omega$ House
Crowell, Mertie, <i>a b</i>	<i>Woods Hole</i>	Metcalf Hall, 14
Crowell, Hannah Cecile, <i>ph</i>	<i>Woods Hole</i>	Metcalf Hall, 14
Cummings, Alice Josephine, <i>a b</i>	<i>209 Main St., Medford</i>	
Curtis, Helen Clare, <i>a b</i>	<i>Addison, Me.</i>	Start House, 5
Cushing, Mary Magdalen, <i>ph</i>	<i>168 Newbury St., Boston</i>	
Draper, Ernest Sparrell, <i>e e</i>	<i>Wayland</i>	
Farr, Irwin Harris, <i>m p</i>	<i>Holyoke</i>	East Hall, 28
Fay, Harold, <i>a b</i>	<i>92 Professors Row, Tufts College</i>	
Forrest, Oscar Edmund, <i>e e</i>	<i>Medford</i>	ΔT House
Gammon, Robert Clair, <i>e e</i>	<i>77 Hawthorne St., Lynn</i>	
Harmon, Betsey Barker, <i>a b</i>	<i>Adams</i>	Metcalf Hall, 2
Hazeltine, William Everett,	<i>17 Beede Ave., Lynn</i>	
Hill, Charles Willis, <i>a b</i>	<i>Salem</i>	East Hall, 30
Hill, Robert William, <i>a b</i>	<i>Salem</i>	East Hall, 30
Hill, Sherburne, <i>e e</i>	<i>47 Prospect St., Lawrence</i>	
Holt, Roland Gordon, <i>m p</i>	<i>Hudson</i>	Dean Hall, 11
Hood, James Henry, <i>e e</i>	<i>Franklin</i>	West Hall, 2
Hooper, Blanche Heard, <i>a b</i>	<i>124 Professors Row, Tufts College</i>	
Kennard, William Oliver, <i>c e</i>	<i>21 Wheeler St., Somerville</i>	
Kimball, Ralph Elmore, <i>c e</i>	<i>Lynn</i>	$Z \Psi$ House

Lewis, Henry Palmer, <i>ph</i>	<i>Randolph, Vt.</i>	East Hall, 10
Lord, Philip Douglas Morton, <i>a b</i>	<i>Biddeford, Me.</i>	East Hall, 34
Lowe, George Albert Jr., <i>e e</i>	<i>Rockport</i>	East Hall, 24
McAllister, Florence Lillian, <i>a b</i>	<i>23 Wallace St., W. Somerville</i>	
McDonald, William Thomas, <i>a b</i>	<i>43 Greenville St., Somerville</i>	
McMahon, Charles Edward, <i>a b</i>	<i>Randolph</i>	West Hall, 10
Marr, Myron Whitmore, <i>m p</i>	<i>Dorchester</i>	West Hall, 18
Mason, Joseph Eaton, <i>a b</i>	<i>Chicago</i>	Z Ψ House
Maxwell, Leon Ryder, <i>a b</i>	<i>Medford</i>	Δ T House
Mayhew, Alfred Boardman, <i>e e</i>	<i>Shelburne Falls</i>	East Hall, 21
Moore, Fred Atkins, <i>a b</i>	<i>10 Grant St., Somerville</i>	
Morley, Raymond Kurtz, <i>a b</i>	<i>Newton Centre</i>	East Hall, 17
Munro, Melville Smith, <i>e e</i>	<i>Medford</i>	Δ T House
Newell, Lewis Winslow, <i>a b</i>	<i>Salem</i>	East Hall, 23
Norcross, Theodore White, <i>c e</i>	<i>Medford</i>	Δ T House
Parker, Clara Elizabeth, <i>a b</i>	<i>Middleboro</i>	Metcalf Hall, 11
Parker, Jessie Merrill, <i>a b</i>	<i>Uxbridge</i>	Start House, 3
Pearson, George Edward, <i>a b</i>	<i>325 Highland Ave., Somerville</i>	
Perkins, Henry Farnsworth, <i>m e</i>	<i>Haverhill</i>	167 College Ave.
Perkins, Oscar Houston, <i>a b</i>	<i>Danvers</i>	
Plunkett, Thomas Francis, <i>a b</i>	<i>Norwich, Conn.</i>	East Hall, 31
Preble, Alfred Emerson, <i>a b</i>	<i>Wilmington</i>	
Preston, Mertie Belle, <i>a b</i>	<i>51 Jaques St., Somerville</i>	
Richardson, Harry Elmer, <i>e e</i>	<i>East Aurora, N. Y.</i>	West Hall, 23
Richardson, Harry Herbert, <i>a b</i>	<i>230 Prospect St., Cambridge</i>	
Roberts, Harriet Norma, <i>a b</i>	<i>35 Emery St., Medford Hillside</i>	
Russell, Clara Rebecca, <i>a b</i>	<i>182 Cambridge St., Winchester</i>	
Sander, Eleonore Henriette Thekla, <i>a b</i>	<i>115 Holworthy St., Cambridge</i>	
Sanders, Annie Louisa, <i>a b</i>	<i>Wayland</i>	Start House, 4
Saunders, Ernest Alexander, <i>c e</i>	<i>16 Summer St., Somerville</i>	
Scoboria, Clarence Preston, <i>a b</i>	<i>23 Veazie St., Somerville</i>	
Shaw, Frank Lester, <i>a b</i>	<i>Augusta, Me.</i>	East Hall, 22
Spaulding, Rachel Josephine, <i>Jaffrey, N. H.</i>		Metcalf Hall, A
Standish, Clara May, <i>ph</i>	<i>Segreganset</i>	10 Lee St., Somerville
Stearns, Lillian Josephine, <i>a b</i>	<i>399 Highland Ave., W. Somerville</i>	
Stowell, Ralph Gilman, <i>e e</i>	<i>Lynnfield</i>	East Hall, 24
Tenney, Ruth, <i>a b</i>	<i>Auburn, Me.</i>	Metcalf Hall, 14
Tufts, Florence Augusta, <i>a b</i>	<i>38 Clifton St., Malden</i>	
Tufts, Leland Everett, <i>e e</i>	<i>48 Newhall St., Lynn</i>	
Walker, Florence Helen, <i>a b</i>	<i>26 Wallace St., W. Somerville</i>	
Watkins, Clarence Elmore, <i>a b</i>	<i>So. Manchester, Conn.</i>	Δ T House
Witham, Ernest Clair, <i>sc</i>	<i>Cumberland Mills, Me.</i>	East Hall, 25

Wood, Edward Holton, <i>e e</i>	<i>Saco, Me.</i>	East Hall, 5
Wood, Roy Eugene, <i>c e</i>	<i>Saco, Me.</i>	West Hall, 17

Freshman Class.

Adams, Benjamin Franklin, <i>e e</i>	<i>East Aurora, N. Y.</i>	East Hall, 12
d'Amaral, Joseph, <i>e</i>	<i>Azores Islands</i>	East Hall, 16
Armstrong, Elias Benjamin, <i>ph</i>	<i>Waltham</i>	Dean Hall, 10
Atsatt, John Thornton, <i>a b</i>	<i>Mattapoisett</i>	West Hall, 6
Bailey, Vesta Louise, <i>a b</i>	<i>50 R College Ave., W. Somerville</i>	
Bean, William Wendell, <i>e</i>	<i>34 Canal St., W. Medford</i>	
Bidwell, George Leslie, <i>ch</i>	<i>24 Anson St., Jamaica Plain</i>	
Bodge, Harold Heath, <i>e</i>	<i>Westbrook, Me.</i>	West Hall, 30
Bowker, Ella Wallace, <i>a b</i>	<i>2 Hillside Ave., Somerville.</i>	
Bridgham, Edward William, <i>m p</i>	<i>Bridgton, Me.</i>	East Hall, 6
Burnham, Fred Walker, <i>a b</i>	<i>Williamstown, Vt.</i>	East Hall, 13
Buzzell, Ada Snowdon, <i>a b</i>	<i>Wakefield</i>	Allen House
Byrnes, Edward Francis, <i>a b</i>	<i>Waterbury, Conn.</i>	East Hall, 8
Calderwood, Mellen Greely, <i>a b</i>	<i>Portland, Me.</i>	West Hall, 26
Cannell, Wirt Virgin, <i>e</i>	<i>Bridgton, Me.</i>	East Hall, 31
Chase, Alfred Whitman, <i>e</i>	<i>1667 Cambridge St., Cambridge</i>	
Claus, Henry Turner, <i>a b</i>	<i>Saugus</i>	East Hall, 15
Clement, Wallace Oakes, <i>e</i>	<i>Auburn, Me.</i>	Dean Hall, 10
Cobb, Ernest, <i>ph</i>	<i>17 Hopedale St., Allston</i>	
Collins, Ida Lillian, <i>a b</i>	<i>29 Franklin St., Everett</i>	
Comstock, Bertha Louise, <i>a b</i>	<i>75 Wyman St., W. Medford</i>	
Crockett, Ernest Dana, <i>ch</i>	<i>Dexter, Me.</i>	East Hall, 15
Cushing, Daniel, <i>e</i>	<i>Lowell</i>	Z Ψ House
Deering, Ralph Leavitt, <i>e</i>	<i>Gorham, Me.</i>	West Hall, 31
Dodge, Waldo Edgar, <i>e</i>	<i>Hyde Park</i>	East Hall, 20
Doherty, Frederick Joseph	<i>Howard, e e Boston</i>	West Hall, 11
Douglas, Jerome Harvey, <i>e</i>	<i>Hull</i>	West Hall, 22
Dow, Roy Gay, <i>e</i>	<i>Bridgton, Me.</i>	East Hall, 10
Dunham, Tom Denny, <i>ch</i>	<i>Barre, Vt.</i>	East Hall, 33
Eldridge, Wilber Allen, <i>e e</i>	<i>North Brewster</i>	
Ewell, Walter Warren, <i>e</i>	<i>231 Salem St., Medford</i>	
Fairbank, Myra Lillian, <i>ph</i>	<i>32 Shepherd St., Cambridge</i>	
Farnum, Carrie Alice, <i>a b</i>	<i>Marlboro</i>	Start House, 3
Farrar, Edward Leslie, <i>e e</i>	<i>Assinippi</i>	East Hall, 23
Fisher, William Ernest, <i>e</i>	<i>26 Hancock St., W. Somerville.</i>	
Ford, Herman Flagg, <i>e</i>	<i>Danville Jct., Me.</i>	
	<i>76 Irving St., Somerville</i>	
Frossard, Helen Amelia, <i>a b</i>	<i>East Pepperell</i>	Metcalf Hall, 6
Garton, Florence Harriet, <i>a b</i>	<i>113 College Ave., W. Somerville</i>	

Gay, George Willard, <i>sc</i>	<i>Norwood</i>	West Hall, 16
Gifford, Cora Louise, <i>ph</i>	<i>Woods Hole</i>	Metcalf Hall, 5
Glenton, Frederico Jr., <i>e e</i>	<i>Nashua, N. H.</i>	Z ♡ House
Godfrey, Alice Amanda, <i>ch</i>	<i>Everett</i>	Allen House
Gordon, Harold Loring, <i>e</i>	<i>19 Woodbine St.,</i>	<i>Auburndale</i> Δ T House
Greene, Harry Marlon, <i>a b</i>	<i>Haverhill</i>	West Hall, 24
Guild, Emily Elizabeth, <i>a b</i>	<i>Brattleboro, Vt.</i>	Start House, 2
Harrington, Charles Ernest, <i>e</i>	<i>Lynn</i>	East Hall, 20
Harrington, George Lawrence, <i>a b</i>	<i>47 Cedar St.,</i>	<i>Somerville</i>
Hickey, Edwin Ernest, <i>e</i>	<i>Tufts College</i>	East Hall, 7
Hunter, Ida Eleanor, <i>sc</i>	<i>Tyngsboro 13 Emery St.,</i>	<i>Medford Hillside</i>
Iredale, Wilfred Lawson, <i>e</i>	<i>Bridgton, Me.</i>	East Hall, 31
Jenks, Daniel Ashley, <i>a b</i>	<i>Holyoke</i>	Dean Hall, 9
Knight, Herbert Carr, <i>e</i>	<i>Woodfords, Me.</i>	West Hall, 30
Loring, Seth Arthur, <i>a b</i>	<i>Portland, Me.</i>	West Hall, 15
Lovejoy, Arthur Waldo, <i>a b</i>	<i>Lowell</i>	West Hall, 13
Maas, Louis Olaf, <i>e</i>	<i>107 Robinwood Ave.,</i>	<i>Jamaica Plain</i> West Hall, 28
McCoy, Florence Lydia, <i>a b</i>	<i>62 Main St.,</i>	<i>Somerville</i>
Marshall, John, <i>e</i>	<i>New Salem</i>	East Hall, 18
Marshall, Wilnah Virginia, <i>ph</i>	<i>New Salem</i>	Allen House
Merrill, Charles Frank, <i>e</i>	<i>47 Fairmount Ave.,</i>	<i>Somerville</i>
Milner, John George, <i>e</i>	<i>82 Highland Ave.,</i>	<i>Somerville</i>
Morrison, Wilbur Fred, <i>e</i>	<i>Lawrence</i>	East Hall, 14
Munroe, Carrie Josephine, <i>a b</i>	<i>70 Myrtle St.,</i>	<i>Somerville</i>
Nason, Ralph Morgan, <i>e</i>	<i>Orange</i>	East Hall, 6
Parks, Ralph Silas, <i>a b</i>	<i>Hudson</i>	East Hall, 14
Perry, Luthur Packard, <i>e</i>	<i>Shelburne Falls</i>	East Hall, 21
Peterson, John Ferdinand, <i>e</i>	<i>Lynn</i>	East Hall, 18
Phillips, Ethel May, <i>a b</i>	<i>1088 Broadway, W.</i>	<i>Somerville</i>
Pratt, Horatio Whittemore, <i>m p</i>	<i>Grafton</i>	Dean Hall, 12
Puffer, Emma Belle, <i>a b</i>	<i>Leominster</i>	Metcalf Hall, 11
Riordan, Alice Cashman, <i>a b</i>	<i>Rockland</i>	Allen House
Seery, Francis Joseph, <i>e</i>	<i>Waterbury, Conn.</i>	East Hall, 8
Shearer, Gordon Grant, <i>e</i>	<i>33 Belmont St.,</i>	<i>Somerville</i>
Smith, Floyd Elliot, <i>e</i>	<i>Brattleboro, Vt.</i>	West Hall, 16½
Speirs, Ernest L., <i>e</i>	<i>Westbrook, Me.</i>	East Hall, 29
Sumner, Louis Worsley, <i>m p</i>	<i>75 Wallace St., W.</i>	<i>Somerville</i>
Sweetser, Sidney Pulsifer, <i>a b</i>	<i>Philadelphia</i>	West Hall, 5
Symmes, Gertrude Locke, <i>a b</i>	<i>77 Main St.,</i>	<i>Winchester</i>
Taylor, Chester Emerson, <i>e</i>	<i>Clinton</i>	167 College Ave.
Taylor, Mabelle Woodbury, <i>a b</i>	<i>Hudson</i>	9 Chester St., Watertown
Temple, Charles Hosea, <i>a b</i>	<i>Hinsdale, N. H.</i>	West Hall, 11

Thompson, Ina Gertrude, <i>a b</i>	<i>202 School St., Somerville</i>	
Viles, Blynn Fred, <i>e</i>	<i>81 Medford St., Medford</i>	
Warner, George Loring, <i>sc</i>	<i>Palmer</i>	West Hall, 31
Waterhouse, Melvin Howard, <i>sc</i>	<i>Westbrook, Me.</i>	
Watkins, Hazel Loraine, <i>ph</i>	<i>So. Manchester, Conn.</i>	Metcalf Hall, 14
Watkins, Lura Clarinda <i>a b</i> ,	<i>So. Manchester, Conn.</i>	Metcalf Hall, C
Wellman, Hugh Horace, <i>e</i>	<i>Westminster West, Vt.</i>	East Hall, 33
Wheeler, Grace Inez, <i>a b</i>	<i>Milan, N. H.</i>	62 Medford St., Medford
Whitney, Howard Rogers, <i>e</i>	<i>107 Sycamore St., Somerville</i>	
Williams, Arthur, <i>a b</i>	<i>1a Prospect St., Charlestown</i>	
Wilson, Harry Percival, <i>e</i>	<i>Worcester</i>	West Hall, 16
Wise, William Mason, <i>a b</i>	<i>West Newton</i>	West Hall, 6
Woodbury, Charles Harlow, <i>a b</i>	<i>Auburn, Me.</i>	West Hall, 15
Woodward, Frank Coy, <i>e e</i>	<i>East Pepperell,</i>	West Hall, 7
Works, Austin Melvin, <i>a b</i>	<i>214½ Medford St., Somerville</i>	

Special Students.

Abbott, John Blackler, I. <i>Chemistry.</i>	<i>East Bethel, Vt.</i>	East Hall, 1
Aldrich, Bertha Alice, I. <i>Music.</i>	<i>27 Blake St., No. Cambridge</i>	
Baker, Frederic Roberts, I.	<i>Buffalo, N. Y.</i>	West Hall, 23
Bartlett, Daisy Mae, III. <i>German.</i>	<i>47 Madison St., Somerville</i>	
Bolles, Margaret Chapman, I. <i>French.</i>	<i>College Ave., Tufts College</i>	
Bowen, James Francis, IV. <i>Political Science.</i>	<i>39 St. James Ave., Boston</i>	
Brown, Walter Campbell, III. <i>Engineering.</i>	<i>Castine, Me.</i>	Δ T House
Cannon, Austin Leo, II. <i>Engineering.</i>	<i>42 Winthrop St., Charlestown</i>	
Chapman, Charles Edward, II. <i>Political Science</i>	<i>Franklin Falls, N. H.</i>	East Hall, 26
Cornet, George Adolphus, I.	<i>Nucasville, Conn.</i>	
Cushman, Arthur Wesley, III. <i>English.</i>	<i>Somerville</i>	West Hall, 24
Druley, Elmer Morey, III. <i>English.</i>	<i>Rockland, O.</i>	Δ T House

Ellis, Arthur Eugene, III. <i>Chemistry</i> .	<i>West Somerville</i>	West Hall, 7
Estabrooks, Louis Bancroft, I. <i>Chemistry</i> .	<i>Wollaston</i>	West Hall, 26
Fay, Margaret, II. <i>German</i> .	<i>92 Professors Row, Tufts College</i>	
Flagg, Ford Tyler, III. <i>Physics</i> .	<i>Richmond, Vt.</i>	Θ Δ X House
Fleming, Patrick William, II. <i>Engineering</i> .	<i>Thorndike</i>	West Hall, 14
Foster, Kate Holmes, I.	<i>East Montpelier, Vt.</i> 9 Electric Ave., W. Somerville	
Galarneau, Dennis Camille Amedee, II. <i>Chemistry</i> .	<i>Holyoke</i>	West Hall, 10.
Gale, Clinton Fifield, III. <i>Philosophy</i> .	<i>Barre, Vt.</i>	Z ♣ House
Hayden, Eleanore Soule, I. <i>Music</i> .	<i>20 Day St., W. Somerville</i>	
Hazeltine, Clyda Blanche, I. <i>Music</i> .	<i>20 Day St., W. Somerville</i>	
Hersey, Arthur William, IV. <i>Engineering</i> .	<i>Dorchester</i>	West Hall, 3
Jackson, Gertrude Ada, III. <i>English</i> .	<i>86 Otis St., Medford</i>	
Jennings, William Henry, I.	<i>Norwich, Conn.</i>	West Hall, 12
Keith, Jessie Vick, I.	<i>So. Hanover</i>	Allen House
Kidder, Martin Lattimer, II. <i>Mathematics</i> .	<i>Rochester, Vt.</i>	West Hall, 22
Kinne, Julia Morton, I.	<i>Barre, Vt.</i>	Metcalf Hall, 7
Knight, Gertrude, A.B., I. <i>Music</i> .	<i>14 Professors Row, Tufts College</i>	
Mackernan, William Ferdinand II. <i>English</i> .	<i>35 Pembroke St., Boston</i>	
Marston, Glenn Hughes, I. <i>English</i> .	<i>Kearney, Neb.</i>	East Hall, 28

Nay, George Nelson, I.	<i>Jericho, Vt.</i>	Dean Hall, 1
Peirce, Arthur Cyrus, IV. <i>Engineering.</i>	<i>Athol</i>	West Hall, 2
Pierce, Chester Earle, II. <i>English.</i>	<i>Rochester, Vt.</i>	West Hall, 21
Ray, Joseph Gordon, IV. <i>Political Science.</i>	<i>Unionville</i>	Δ T Δ House
Sanders, Amalie Cecilia Dorothea, I.	<i>469 Broadway, Cambridge</i>	
Sennett, James Edward, I. <i>History.</i>	<i>Wells, Vt.</i>	East Hall, 25
Shaw, Edwin Adams, B.S., I. <i>Engineering.</i>	<i>22 Billingham St., W. Somerville</i>	
Sheldon, Charles Talbot, II. <i>Engineering.</i>	<i>No. Billerica</i>	
Spear, Stanley Gates, B.D., I. <i>English.</i>	<i>499 Salem St., Malden</i>	
Steinberg, Henry Joseph, I.	<i>Webster</i>	West Hall, 14
Stolworthy, Walter Hillary, II. <i>History.</i>	<i>Franklin Falls, N. H.</i>	
Swansey, Katharine Josephine, I.	<i>102 Prospect St., Somerville</i>	
Teague, Donald Spencer, II. <i>Mathematics.</i>	<i>Caribou, Me.</i>	West Hall, 25
Toy, Harvey Marshall, I. <i>English.</i>	<i>San Francisco, Cal.</i>	
Waldron, Abigail Baxter, I.	<i>34 Granite St., Quincy</i>	
Williams, Arthur Frank Jr., II. <i>Chemistry.</i>	<i>16 Berkeley St., Malden</i>	

DIVINITY SCHOOL.

[The right-hand column contains the college residence of every student having such residence, the neighboring cities of Somerville and Medford being thus included. The middle column records the home address.]

Fourth Year.

Cole, Fred Henry,	<i>Ludlow, Vt.</i>	Paige Hall, 19
Colson, George William,	<i>Salem</i>	Paige Hall, 6

Crowell, Arthur Freeman,	<i>Providence, R. I.,</i>	Paige Hall, 25
A.B., Brown University, 1899.		
Flower, Donald Marshall,	<i>Hartland, Vt.</i>	Paige Hall, 27
Hatch, Wallace,	<i>Roxbury</i>	Paige Hall, 24
Myers, Charles N.,	<i>Detroit, Mich.</i>	Paige Hall, 7
Patterson, Talmadge Macaulay,	<i>Lynn</i>	Paige Hall, 22

Third Year.

Andrews, Charles Masson,	<i>Newtonville</i>	Paige Hall, 18.
B.S., 1900.		
Maxwell, Alfred Roscoe,	<i>Moore's Mills, N. B.</i>	Paige Hall, 1

First Year.

Emmons, Charles Henry,	<i>Bridgeport, Conn.</i>	Paige Hall, 3
Hadley, Rubens Rey,	<i>Sterling</i>	Paige Hall, 36
Hodgdon, Ernest Marston,	<i>Boothbay, Me.</i>	Paige Hall, 15
Howes, George Henry,	<i>Lowell</i>	Paige Hall, 13
Lewis, George Hallam,	<i>Meriden, Conn.</i>	Paige Hall, 31
Miller, George Arthur,	<i>N. Attleboro</i>	Paige Hall, 30

TUFTS COLLEGE MEDICAL SCHOOL.

 P. O. address : Corner Huntington and Rogers Avenues, Boston.

Senior Class.

Adams, Eva Argene	<i>Brunswick, Me.</i>
Aspray, Joseph	<i>Sudbury</i>
Baker, Lily Owen	<i>Boston.</i>
Barnum, Charles James	<i>Rochester, N. Y.</i>
Blodgett, Harold P.	<i>Leominster.</i>
Bowers, Elbern T.	<i>Lewiston, Me.</i>
Clarke, George Haven	<i>Concord, N. H.</i>
Curran, Simon Francis	<i>Dorchester.</i>
Eldridge, Harvey Loud	<i>East Boston.</i>
Ellis, Edward Keith	<i>Hyde Park.</i>
Finegan, Daniel Joseph	<i>Gloucester.</i>
Gallagher, John Vincent	<i>Milford.</i>

A.B., Boston College.

Gill, Mary Eva	<i>Brookline.</i>
Gilman, Florence	<i>Braintree.</i>
Harriman, Cora Elizabeth	<i>Framingham.</i>
Hodgdon, Ralph Franklin.	<i>Gloucester.</i>
Hurwitz, Abraham J.	<i>Boston.</i>

Ph.G., Massachusetts College of Pharmacy.

Jackman, Alice May	<i>Wakefield.</i>
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Konikow-Bucholz, Antoinette F., A.B.	<i>Boston.</i>
Lawton, William Frazer	<i>Charleston, S. C.</i>
Lilienthal, Alice Estelle	<i>Cambridge.</i>
Lucas, Julian Dyer	<i>Norwich, Conn.</i>
Malone, Charles	<i>Boston.</i>
Malone, John, LL.B.	<i>Boston.</i>
Massé, Mathilde M.	<i>Boston.</i>
Mayell, Ernest Alfred	<i>Watertown.</i>
Michael, Helen Abbott	<i>Boston.</i>
Morgner, Richard A., Ph.G.	<i>Clinton.</i>
Müller, Charles A.	<i>Roxbury.</i>
Murphy, Frank Augustus	<i>Taunton.</i>
O'Brien, Joseph J.	<i>Dorchester.</i>
Osborne, Ernest Sumner	<i>Rochester, N. H.</i>
DeOlloqui, Marie Janette	<i>Kingston, N. B.</i>
Paine, Alonzo Kingman	<i>Hyannisport.</i>
Parker, Albert Munro	<i>Boston.</i>
Peabody, Anna Howe, A.B. (Holyoke).	<i>Danvers.</i>
Pease, Lewis Waite	<i>Weymouth.</i>
Peters, Willard Chute	<i>Boston.</i>
Pierson, John C.	<i>Boston.</i>
Plainfield, Mark Henry	<i>Providence, R. I.</i>
Rose, William Milton	<i>Cambridge.</i>
Simmons, Hannah Coralynn	<i>Worcester.</i>

Third Year.

Averell, Charles Wilson, A.M.	<i>Boston.</i>
Baker, Ida B.	<i>New Boston, N. H.</i>
Bazin, A. Edmond	<i>Haverhill.</i>
Bowers, Elbern Taylor	<i>Lewiston, Me.</i>
Brooks, Edith May	<i>Springfield.</i>
Buck, Charles Edward	<i>Westminster, Vt.</i>
Butterfield, George K.	<i>Reeds Ferry, N. H.</i>
Caswell, Bertram Horace	<i>Wilmington.</i>
Ceconi, John A.	<i>Dorchester.</i>
Clarke, Inez Louise, A.B. (Radcliffe)	<i>Cambridge.</i>
Cody, Joseph John	<i>Dorchester.</i>
Cole, Arthur J.	<i>Haverhill.</i>
Conway, Francis Bernard	<i>Cambridge.</i>
Cotter, Maurice Edward	<i>Lawrence.</i>
Coulson, Richard	<i>Arlington Heights.</i>
Croswell, Mary Sibylla, A.B.	<i>Farmington Falls, Me.</i>
Daly, Jeremiah J.	<i>Andover.</i>

Davis, John Henry, A.M.	<i>Georgetown.</i>
Derby, Fred W.	<i>Arlington.</i>
Derrick, George William	<i>Cambridgeport.</i>
Downing, Charles Harland	<i>Portsmouth, N. H.</i>
Dubois, Eoline B. C.	<i>Edgewood, R. I.</i>
Faxon, Eudora Winnifred	<i>Boston.</i>
Ferguson, Creighton	<i>Cambridge.</i>
Gillette, George William	<i>Boston.</i>
Halsall, Mary Elizabeth	<i>E. Boston.</i>
Hardwick, Frederick Veazie	<i>Quincy.</i>
Haskins, Frank E.	<i>Brattleboro, Vt.</i>
Haviland, Walter Childs	<i>Holliston.</i>
Henry, James Edward Francis	<i>Providence, R. I.</i>
Herring, Will Mortimer	<i>No. Attleboro.</i>
Horne, Lester W.	<i>Norway, Me.</i>
Jacobs, Charles M.	<i>Cambridge.</i>
Kerr, Isabella Dickieson	<i>Medford.</i>
Keeler, William Basil	<i>Roxbury.</i>
Klein, Wilhemina	<i>Boston.</i>
Langworthy, Henry Grover	<i>Dubuque, Ia.</i>
Mahoney, Francis Aloysius	<i>Chelsea.</i>
Makechnie, Arthur North	<i>W. Somerville.</i>
McElroy, Frank H.	<i>Providence, R. I.</i>
McNeil, Edmund J.	<i>Cambridge.</i>
Medler, Faith Curtis	<i>Rockford, Ill.</i>
Mitchell, Ethel Susanna.	<i>Plymouth, N. H.</i>
Moran, Thomas, Jr.	<i>Boston.</i>
Murphy, Edward M.	<i>Lowell.</i>
O'Brien, Loretta J.	<i>Chelsea.</i>
O'Brien, William Francis	<i>Pawtucket, R. I.</i>
Parr, John	<i>Lawrence.</i>
Plunkett, Harold B.	<i>Lowell.</i>
Paull, Chester Alpheus	<i>Hollis, N. H.</i>
Pohl, Carl Matthias	<i>Brockton.</i>
Reis, Frederick	<i>Boston.</i>
Rice, Florence Frances	<i>Boston.</i>
Ripley, William Littlefield	<i>Newton.</i>
Sanborn, Warren B.	<i>Augusta, Me.</i>
Scanlan, Thomas J.	<i>E. Boston.</i>
Sheehan, William Joseph	<i>So. Boston.</i>
Stickney, Elizabeth M.	<i>Boston.</i>
Skinner, Ralph Douglas	<i>Jamaica Plain.</i>
Sullivan, Frank A.	<i>St. Stephen, N. B.</i>
Swan, Horace Cheney	<i>Boston.</i>

Thurber, Stephen Francis	<i>Warren, R. I.</i>
Topaz, Anna	<i>Boston.</i>
Turner, James Henry	<i>Salem.</i>
Varnum, Leavitt R. J.	<i>Lowell.</i>
Wernick, Benzoin G.	<i>Boston.</i>
Wheatley, Louis F.	<i>Meriden, Conn.</i>
Whittle, John Augustus	<i>Wakefield.</i>
Winslow, Guy M., Ph.D. (Tufts).	<i>Auburndale.</i>

Second Year.

Abbott, Harry Daniel	<i>Lynn.</i>
Ameno, Joseph Lewis	<i>Boston.</i>
Anderson, John Hammond	<i>Quincy.</i>
Ballou, Ambrose Roche	<i>West Quincy.</i>
Bennett, William Henry	<i>No. Raynham.</i>
Biron, Wilfred L.	<i>Manchester, N. H.</i>
Blanchard, Stanley W.	<i>Boston.</i>
Bloomberg, Senior	<i>Boston.</i>
Brady, Frank Robert	<i>Lowell.</i>
Bragdon, Guy Frank	<i>Boston.</i>
Buchold, Fred George	<i>Lawrence.</i>
Buckley, David J.	<i>Arlington.</i>
Carey, Frank Arthur	<i>Taunton.</i>
Carley, Margaret Elizabeth	<i>Winthrop.</i>
Chandler, Clarence Luther	<i>Townsend.</i>
Chase, James Smalley	<i>N. Duxbury.</i>
Chase, Lawrence Milton	<i>N. Duxbury.</i>
Clay, Waldo Hoit	<i>Laconia, N. H.</i>
Collins, Aubrey John	<i>Boston.</i>
Corey, Frederic Hall	<i>Roxbury.</i>
Cyr, Emile E.	<i>Lawrence.</i>
Dailey, Edward Joseph	<i>Somerville.</i>
Dearborn, Luther Gould, Jr., A.B. (Tufts)	<i>Somerville.</i>
Derrick, Joseph S.	<i>Charlestown.</i>
Foster, Maud Ashley	<i>Boston.</i>
Garry, John Joseph	<i>Methuen.</i>
Gettings, Thomas Lawrence	<i>Fall River.</i>
Harrington, Robert B.	<i>Somerville.</i>
Harrison, Henry	<i>Ware.</i>
Haskins, Ethel Grace	<i>Medfield.</i>
Hill, Johnson W., B.D. (Tufts)	<i>Boston.</i>
Holt, Lucinda Mary-Belle, B.L. (Smith)	<i>Portland, Me.</i>
Janes, Arthur Percy	<i>Boston.</i>

Kelley, John Joseph	<i>Dorchester.</i>
Kendall, George R.	<i>Brentwood, N. H.</i>
Kendricken, Joseph Thomas	<i>Boston.</i>
Kennison, Frederic Marshman	<i>Boston.</i>
Kenny, Walter Clement	<i>Sharon, Vt.</i>
Kingsbury, Walter W.	<i>Walpole.</i>
Levins, Nathan N.	<i>Boston.</i>
Lucas, Charles J. R.	<i>Cambridge.</i>
Mayrand, Eugene	<i>Lowell.</i>
McGurn, William J.	<i>E. Bridgewater.</i>
Meehan, Patrick J.	<i>Lowell.</i>
Murphy, Charles A.	<i>Boston.</i>
Murphy, Frederick P.	<i>Lowell.</i>
Murphy, Thomas William	<i>Lawrence.</i>
Myles, Leo Thomas	<i>Cambridge.</i>
Newton, William Henry	<i>Waltham.</i>
O'Brien, Henry Clinton	<i>Boston.</i>
D. M.D., Harvard.	
Pinner, Charles Francis	<i>Boston.</i>
Pofcher, Elias Harris	<i>Boston.</i>
Prevett, Joseph	<i>Boston.</i>
Reilly, Thomas Ignatius	<i>Brockton.</i>
Robison, J. Collier	<i>Fillmore City, Utah.</i>
Robinson, Philip Eaton,	<i>Medford.</i>
Schmidt, Richard Deidrich	<i>Roxbury.</i>
Seymour, Horace Darling	<i>Warren, R. I.</i>
Shaw, Frederick E.	<i>Haverhill.</i>
Shaw, Matthew Albert Neil	<i>Roxbury.</i>
Shay, Charles E.	<i>Roxbury.</i>
Smith, William Morgan	<i>Somerville.</i>
Stockbridge, Albert Horatio	<i>Lynn.</i>
Stoodley, Harry Marr	<i>Somerville.</i>
Sullivan, Cornelius A.	<i>Everett.</i>
Sullivan, Frank A.	<i>St. Stephen, N. B.</i>
Tangney, Charles W.	<i>Rockland.</i>
Taylor, Ernest Albert	<i>Lunenburg, Vt.</i>
Tinkham, Oliver Goldsmith	<i>Weymouth.</i>
Toohey, Thomas Victor	<i>Roxbury.</i>
Tower, Freeman A.	<i>Sterling Junction.</i>
Wagner, Emma Juliet	<i>Boston.</i>
Wallace, Annie M.	<i>West Gore, N. S.</i>
Walsh, Joseph Francis	<i>Lawrence.</i>
Warren, Lizzie Maude	<i>New Boston, N. H.</i>
Warren, Thomas Francis	<i>Fall River.</i>

William, Fred Russell. *Worcester.*
 Woodhill, Edith Esty *Dorchester.*

First Year.

Almgren, Ebba Elizabeth *New York, N. Y.*
 Bigelow, Alice Houghton *Boston.*

A.B., Boston University.

Bloomfield, Maximilian Mandol. *Boston.*
 Boardman, Charles A. *Boston.*
 Bogan, Frederic Leon *Somerville.*
 Brassil, Timothy Francis *Cambridge.*
 Brearton, Edward John *So. Boston.*
 Breen, James Henry *Hudson.*
 Brown, Edison William *Dorchester.*
 Brown, Louis Raymond (A.B., Tufts) *Putnam, Conn.*
 Byers, Alice LeEtta *Boston.*
 Caldwell, Joseph Davis *Waltham.*
 Carroll, Arthur Everett *Danvers.*
 Carter, Fred Henry *Holliston.*
 Carvill, Lizzie Maud *Somerville.*
 Choate, Alton J. *Salem.*
 Clark, Harry William *No. Woburn.*
 Cogan, Henry James *Hyde Park.*
 Connor, John Henry Francis *Boston.*
 Conwell, Walter Livingston, Jr. *Boston.*
 Cormerais, Henry, A.B. *Everett.*
 Cotter, Edward Joseph *Boston.*
 Cox, Ann Caroline *Roxbury.*
 Cregg, Francis Aloysius *Lawrence.*
 Cummings, John Francis *Brockton.*
 Curry, Ernest Francis *Melrose.*
 Curtis, Alton Kallock *Boston.*
 Daly, John Augustine *Andover.*
 Dame, Harry A. *Lynn.*
 Donovan, John H. *Lowell.*
 Driscoll, DeCoursey John *Holliston.*
 Dudley, Oscar Albert *Cochituate.*
 Dunham, Adeline Francis *Boston.*
 Dutcher, William Austin *Boston.*
 Dwyer, William Joseph *Cambridge.*
 Eastman, George Warren *E. Corinth, Me.*
 Eddy, Merritt Otis *Townshend, Me.*
 Fiske, Rebecca Cutler *Grafton.*
 Fiske, Willard O. *Lawrence.*

Galbraith, Anna Veitch	<i>Montreal, Canada.</i>
Gile, Frank Herbert	<i>Melrose.</i>
Glen, C. Leonard	<i>Pawtucket, R. I.</i>
Goddu, Louis A. O., Ph.G. (Mass. Coll. Phar.)	<i>Winchester.</i>
Gookin, Edward Richard	<i>Boston.</i>
Hainchcliffe, Frederick	<i>Maynard.</i>
Hammond, Harry Weymouth	<i>Chocorua, N. H.</i>
Hardwick, Sydney Curtis	<i>Quincy.</i>
Harney, Robert Edwin Aloysius	<i>Boston.</i>
Henry, Thomas Francis	<i>Salem.</i>
Higgins, George V.	<i>N. Abington.</i>
Hinkley, Josephine S.	<i>Peabody.</i>
Houghton, Richard Henry	<i>E. Boston.</i>
Hurley, Cornelius Thomas	<i>Roxbury.</i>
Hussey, William Francis	<i>Boston.</i>
Kelly, Haney Augustine	<i>Dorchester.</i>
Kelly, John M.	<i>Boston.</i>
Landers, George Bagnell	<i>Chelsea.</i>
Long, Merritt Allen	<i>Manchester.</i>
Looney, Edward M.	<i>Salem.</i>
Lynch, William	<i>Boston.</i>
Major, Marion E.	<i>Dorchester.</i>
Malcherek, William Hans Paul	<i>Boston.</i>
McCarthy, Eugene Justin	<i>Malden.</i>
McCarthy, Francis Patrick	<i>Boston.</i>
McDow, Alice May	<i>Cambridge.</i>
McGaffigan, Bernard F	<i>Charlestown.</i>
McLaughlin, John David	<i>E. Boston.</i>
McPhail, John Gunn	<i>Boston.</i>
McVey, Frederick Joseph	<i>Dorchester,</i>
Murphy, Anna Frances	<i>Nashua, N. H.</i>
Murphy, Frederick Vincent	<i>Brockton.</i>
Nason, Howard Nelson	<i>Boston.</i>
Nolan, James Patrick Augustus	<i>Boston.</i>
Noyes, William Nelson	<i>Portsmouth, N. H.</i>
O'Brien, William Smith	<i>Marlboro.</i>
Palmer, Louis James	<i>Boston.</i>
Peterson, Clarke Kimball	<i>Boston.</i>
Peters, Solon Wilder	<i>Sterling.</i>
Rand, Anna Ethel	<i>Worcester.</i>
Reeves, W. Arthur	<i>Lynn.</i>
Richardson, Horace Kimball, Jr.	<i>Medford.</i>
Roach, Alfred John	<i>Lowell.</i>

Robinson, Philip Eaton	<i>Medford.</i>
Rochford, Grace Elizabeth	<i>Wellesley.</i>
Rogers, Frank Norwood	<i>Barre.</i>
Rowe, Carl Allen	<i>Franklin, N. H.</i>
Rushford, E. Allan	<i>Salem.</i>
Sawyer, Edward Whitmore	<i>Roxbury.</i>
Scannell, James Joseph A.	<i>Roxbury.</i>
Shaw, Ellen Eddy	<i>Woburn.</i>
Sherman, George Ernest	<i>Cambridge.</i>
Sheeley, Richard William	<i>Weymouth.</i>
Simon, Arthur Leslie	<i>Waltham.</i>
Smith, Myrtle	<i>Somerville.</i>
Soukiris, Cosmos Jordan	<i>Boston.</i>
Southworth, Hamilton M.	<i>Providence, R.I.</i>
Spline, Robert E.	<i>Dorchester.</i>
Stacey, Winthrop Downing	<i>Charlestown.</i>
Sullivan, John T.	<i>Charlottetown, P. E. I.</i>
Sundin, Axel K. H.	<i>Providence, R. I.</i>
Taylor, Maude Winnifred	<i>Hartford, Conn.</i>
Thompson, Harold Fenton	<i>Monson.</i>
Tucker, Arthur Wallace	<i>Chelsea.</i>
Turner, Edgar Allan	<i>Boston.</i>
Tyson, Forrest C.	<i>Franklin, Mich.</i>
Walker, William Dacre	<i>Somerville.</i>
Walsh, Joseph	<i>Augusta, Me.</i>
Washburn, Chester Angus	<i>Everett.</i>
Weeden, Allen Augustus	<i>Providence, R. I.</i>
Whipple, Lewis Allen	<i>Essex.</i>
Williams, David Lawrence	<i>Boston.</i>
Wood, Albert John	<i>Allston.</i>
Wright, Francis Joseph	<i>Roxbury.</i>
Young, Charles Henry	<i>Woburn.</i>
Zaratt, Josefa	<i>San Juan, Porto Rico.</i>

Special Students.

Bosworth, Abby Frances,	<i>Brookline.</i>
Brown, Frank W.	<i>Epping, N. H.</i>
Cogan, Thomas F.	<i>Lynn.</i>
Currier, Richard Doe	<i>Boston.</i>
Dadmun, Eliza J.	<i>Boston.</i>
Feeley, Charles P.	<i>Cambridge.</i>
Foster, Ellis F., M.D.	<i>New Bedford.</i>
Gately, Mary A. M.	<i>Boston.</i>

Gorham, George H.	<i>Boston.</i>
Hayes, Mary A.	<i>Keene, N. H.</i>
Hoerr, John L.	<i>Boston.</i>
Loewe, Leonard J., M.D.V. (Harvard)	<i>Boston.</i>
Medalia, Leon	<i>Boston.</i>
Parmenter, Frances	<i>Boston.</i>
Pearman, William S., D.D.S. (B.D.C.)	<i>Boston.</i>
Scott, J. Stephen, D.D.S. (B.D.C.)	<i>Jamaica Plain.</i>
Trower, Arthur H.	<i>So. Boston.</i>
Wood, Sarah F.	<i>Boston.</i>

TUFTS COLLEGE DENTAL SCHOOL.

Senior Class.

Bennett, Edward S.	<i>Waltham.</i>
Berks, Pliny W.	<i>Jamaica Plain.</i>
Burke, Edward V.	<i>Natick.</i>
Burke, Foster A. McL.	<i>Haverhill.</i>
Bussey, Joseph H.	<i>Boston.</i>
Cail, James W.	<i>Harcourt, N. B.</i>
Cann, Melvin C.	<i>Brenton, N. S.</i>
Carter, Farquhar D.	<i>Boston.</i>
Clark, Arthur H.	<i>New Portland, Me.</i>
Cote, Omer H.	<i>Woonsocket, R. I.</i>
Cousens, Frank B.	<i>Biddeford, Me.</i>
Davis, Bertha J.	<i>Lowell.</i>
Dickerman, Ralph W.	<i>Taunton.</i>
Fox, Edward T.	<i>Clinton.</i>
Garland, Samuel R.	<i>Somerville.</i>
Glynn, Harry D.	<i>Dorchester.</i>
Grant, Giles C.	<i>Portland, Me.</i>
Hackett, Ephriam R.	<i>Kingfield, Me.</i>
Homan, Ernest W.	<i>Saugus.</i>
Keith, Ivan S.	<i>Boylston.</i>
King, Fred E.	<i>Chipman, N. B.</i>
Lawton, James A.	<i>Somerville.</i>
Lincoln, Ernest F.	<i>Leominster.</i>
Locke, Maurice E.	<i>Brockton.</i>
Lockhart, James P.	<i>Boston.</i>
Lombard, Ralph G.	<i>Belfast, Me.</i>
Macleod, Alexander S.	<i>Brookline.</i>
Merrill, Edward A.	<i>Winn, Me.</i>
Moody, Samuel I.	<i>Harwich.</i>

Moore, Horace D.	<i>Lynn.</i>
Perry, Gerda von B.	<i>Boston.</i>
Perry, Stephen D.	<i>New Bedford.</i>
Pierce, Lewis J.	<i>Boston.</i>
Pratt, Sumner W.	<i>Parsonsfield, Me.</i>
Ramsdell, Charles F., Jr.	<i>Dover, N. H.</i>
Romanow, Mark	<i>W. Somerville.</i>
Russell, Frederick P.	<i>Shrewsbury, Vt.</i>
Small, Harry P.	<i>So. Portland, Me.</i>
Smart, Albert L.	<i>Lancaster.</i>
Stetson, Joseph S.	<i>Brunswick, Me.</i>
Steward, Charles, A.B. (Harvard)	<i>Boston.</i>
Taylor, Ernest B.	<i>Waltham.</i>
Tewksbury, G. A.	<i>Morrisville, Vt.</i>
Tewksbury, Ralph M.	<i>Woodstock, Vt.</i>
Thayer, John P.	<i>Boston.</i>
Tunncliffe, Edmund Harrison	<i>E. Douglas.</i>
Viles, Charles R.	<i>Skowhegan, Me.</i>
Wells, Rollin E.	<i>Lynn.</i>

Junior Class.

Bachand, Joseph D.	<i>Sherbrooke, Canada.</i>
Bence, Carrie I. H.	<i>Fall River.</i>
Boden, Arthur R.	<i>Boston.</i>
Bowles, Boyd F.	<i>Waterville, N. S.</i>
Brosnahan, James L.	<i>Boston.</i>
Cargill, William L.	<i>Liberty, Me.</i>
Carpenter, George W.	<i>Rehoboth.</i>
Chisholm, Lester D.	<i>Bridgewater.</i>
Cogger, Francis A.	<i>Boston.</i>
Cole, Chas. R.	<i>Pawtucket, R. I.</i>
Desmond, Walter Patrick	<i>Medford.</i>
Dixon, Joseph R.	<i>Boston.</i>
Dooley, John H.	<i>Roxbury.</i>
Doubleday, Arthur W.	<i>Springfield.</i>
Dow, William S.	<i>Arlington.</i>
Draffin, Harry A.	<i>Leominster.</i>
Durgin, Oliver K. P.	<i>Saco, Me.</i>
Fall, Edward	<i>Newton.</i>
Farquhar, Robert, Jr.	<i>Concord Junction.</i>
Farrington, Curtis	<i>Boston.</i>
Fraher, Michael J.	<i>So. Boston.</i>
Gehrunge, A. F.	<i>N. Attleboro.</i>

Gilday, Frank J.	<i>Everett.</i>
Gobie, William A.	<i>Woodstock, Vt.</i>
Gokey, Harry M.	<i>Northfield, Vt.</i>
Gould, Arthur R.	<i>Brockton.</i>
Gowen, Charles E.	<i>Dover, N. H.</i>
Griffin, John J.	<i>Waltham.</i>
Harpin, Henry T.	<i>Windsor, Vt.</i>
Harris, Leslie W.	<i>Natick.</i>
Hatch, Theron H.	<i>Damariscotta, Me.</i>
Hough, Grace M.	<i>Fall River.</i>
Jamieson, Robert C.	<i>Boston.</i>
Kelley, Varney A.	<i>Boston.</i>
Kiley, Robert D.	<i>Salem.</i>
Lanigan, Francis J.	<i>Calais, Me.</i>
Logwood, Burt E.	<i>Roxbury.</i>
Lowell, Ralph P.	<i>Waltham.</i>
Maguire, John A.	<i>Dorchester.</i>
Mahoney, George E.	<i>E. Boston.</i>
Mason, Walter C.	<i>Gaysville, Vt.</i>
McCarthy, John L.	<i>Brockton.</i>
McCarthy, William F.	<i>Cambridge.</i>
McGlew, Charles K.	<i>Salem.</i>
McInnes, George F.	<i>Cambridge.</i>
Miles, Bruce B.	<i>Maugerville, N. B.</i>
Moderno, Louis.	<i>Somerville.</i>
Moran, John J.	<i>Woburn.</i>
O'Brien, James, Jr.	<i>Ashland.</i>
O'Sullivan, Frank A.	<i>Lowell.</i>
Pendleton, Irving E.	<i>Searsport, Me.</i>
Pettingill, Clarence A.	<i>Hudson.</i>
Quinn, Francis X.	<i>Worcester.</i>
Reardon, Joseph E.	<i>Cambridge.</i>
Rooney, Francis X.	<i>Springfield.</i>
Sargent, Sidney B.	<i>Searsport, Me.</i>
Shaw, George M.	<i>New York, N. Y.</i>
Shillington, James H.	<i>Lynn.</i>
Shooshan, Harry M.	<i>Boston.</i>
Slattery, John T.	<i>So. Boston.</i>
Sproul, Frank	<i>Bristol, Me.</i>
Staples, Odber W.	<i>St. John, N. B.</i>
Thorburn, Howard L.	<i>Boston.</i>
Tobin, Edward W.	<i>So. Boston.</i>
Viles, Harold S.	<i>N. New Portland, Me.</i>

Wightman, Morse *Attleboro.*
 Wren, John J. *Jamaica Plain.*

Freshman Class.

Ash, Henry *N. Weymouth.*
 Askowith, Charles. *Boston.*
 Atwood, Ira O. *N. Attleboro.*
 Barron, Wilson D. *Dorchester.*
 Benner, Guy C. *Medford.*
 Biron, Edward N. *Manchester, N. H.*
 Bodge, Frederick G. *Tamworth, N. H.*
 Bonney, Theresa E. *Somerville.*
 Branigan, Edward B. *Wakefield.*
 Breslin, John L. *Woburn, Mass.*
 Brigham, Ernest P. *Westboro.*
 Brooks, Ernest R. *Northfield, Vt.*
 Brown, Charles D. *Somerville.*
 Brown, Harry G. *Waltham.*
 Bruce, Barnett *Portland, Me.*
 Bunker, Jane Graupner *New York, N. Y.*
 Butler, Charles C. *Pittsfield.*
 Centervall, Ivan A. T. *Helsingborg, Sweden.*
 Cherry, Henry A. *Boston.*
 Chester, Carey R. *Malden.*
 Clarke, Charles P. *Ayer.*
 Cleary, Patrick H. *Leominster.*
 Cole, Howard B. *Haverhill.*
 Collins, Stephen B. *Avon.*
 Davis, Joseph B. *Bridgton, Me.*
 Davis, Myrton O. *Worcester.*
 Dearing, Dana E. *Randolph, Vt.*
 Donlon, Lawrence E. *Boston.*
 Dowd, Thomas P. *S. Natick.*
 Edmunds, Arnold W. *Westfield, Vt.*
 Fenelon, James J. *E. Boston.*
 Ferguson, Alexander *Westerly, R. I.*
 Fowler, Miles H. *Dorchester.*
 Francis, Melville F. *Malden.*
 Gallagher, Charles A. *Roxbury.*
 Gibbons, John J. *Clinton.*
 Gilpatric, Edgar F. *Biddeford, Me.*
 Goldsworthy, Stephen R. *Central Falls, R. I.*
 Goodrich, Lynn M. *Oakland, Me.*

Grant, W. Henry	<i>Cambridge.</i>
Harrison, Henry H.	<i>So. Boston.</i>
Hart, Frederick J.	<i>Lowell.</i>
Heckerman, John N.	<i>Bedford, Penn.</i>
Hennessy, Thomas.	<i>Boston.</i>
Hill, Hugh T.	<i>Dorchester.</i>
Hodgdon, Alby E. P.	<i>E. Foxboro.</i>
Hubbard, Elwin T.	<i>Lovell, Me.</i>
Jenkins, George A.	<i>N. Weymouth.</i>
Jewett, Elton S.	<i>Boston.</i>
Johnson, Alfred L.	<i>Shelburne Falls.</i>
Kennedy, John J.	<i>Chicopee.</i>
King, Jeannette E.	<i>Boston.</i>
La Riviere, Ulysse	<i>Manville, R. I.</i>
Luce, Maurice G.	<i>Haverhill.</i>
Lunt, Wilbur T.	<i>Rochester, N. H.</i>
Lyons, Joseph T.	<i>So. Boston.</i>
Mahoney, James F.	<i>Waltham.</i>
Manster, James S.	<i>Dorchester.</i>
McCarthy, Justin L.	<i>Ashland.</i>
McGourty, Frederick W.	<i>Worcester.</i>
McKeon, John F.	<i>Taunton.</i>
MacKinnon, John R.	<i>Roxbury.</i>
Mignault, William T.	<i>So. Boston.</i>
Montgomery, G. Douglass	<i>St. John, N. B.</i>
Montgomery, William E.	<i>Natick.</i>
Moran, Philip F.	<i>Somerville.</i>
Morgan, Daniel J.	<i>So. Boston.</i>
Mullin, David J.	<i>St. John, N. B.</i>
Osborne, Shelley B.	<i>Uxbridge.</i>
Packard, Samuel A.	<i>Portland, Me.</i>
Perrault, Oscar L.	<i>N. Brookfield.</i>
Pike, Ezra B. Jr.	<i>Brentwood, N. H.</i>
Riley, J. Joseph	<i>Rockland.</i>
Riley, William H.	<i>Woodstock, Vt.</i>
Rivers, James A.	<i>Boston.</i>
Rockett, Joseph B.	<i>Dorchester.</i>
Romanow, Morris	<i>W. Somerville.</i>
Romanow, Morris T.	<i>Boston.</i>
Rounds, Daniel	<i>Saco, Me.</i>
Seagrave, Chauncey W.	<i>Uxbridge.</i>
Shaughnessy, Emma E.	<i>Newtonville.</i>
Shay, Joseph W.	<i>Roxbury.</i>
Slayton, Dean H.	<i>Montpelier, Vt.</i>

Smith, Clarence E.	<i>Fredericton Jct., N. B.</i>
Smith, H. Monford	<i>E. Boston.</i>
Stegelman, Alfred G.	<i>Lewiston, Me.</i>
Stetson, Harry M.	<i>Cohasset.</i>
Story, Ernest S.	<i>Salem.</i>
Streijffert, Thure G.	<i>Helsingborg, Sweden.</i>
Stuart, Clifford A.	<i>Cambridge.</i>
Thomas, Charles A.	<i>Somerville.</i>
Thompson, Harry S.	<i>Moncton, N. B.</i>
Thorburn, Stanley B.	<i>Boston.</i>
Ufford, Eugene U.	<i>Holyoke.</i>
Wells, Ernest L.	<i>Waltham.</i>
Wheeler, George G.	<i>Providence, R. I.</i>
Whitehouse, Frank H. G.	<i>Providence.</i>
Whitredge, Eugene A.	<i>Foxcroft, Me.</i>
Wilkinson, Alvin T.	<i>Providence, R. I.</i>

Special Student.

Church, Howard W., D.M.D. (Tufts) . . .	<i>Bristol, R. I.</i>
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THE BROMFIELD-PEARSON SCHOOL.

[All Engineering Students of Tufts College attending courses in Shopwork, and the following pursuing preparatory courses]:—

Chevalier, Louis,	<i>Naugatuck, Conn.</i>
Dods, Francis Alexander,	<i>24 Partridge Ave., Somerville.</i>
Hansen, Frank,	<i>23 Hooker St., Medford.</i>
Marshall, Dudley Blanchard,	<i>48 Professors Row, Tufts College.</i>
O'Donnell, Michael James,	<i>42 Washburn St., Boston.</i>
Swenson, Henry,	<i>46 Quincy St., Medford.</i>
Whitehouse, Wendell Lewis,	<i>74 Jenny Lind Ave., Somerville.</i>

STUDENTS IN THE SUMMER SCHOOLS.

The Summer School of Chemistry.

[The studies pursued are represented by the following symbols: *c*, Chemistry; *m*, Mathematics; *e*, English. Tufts College is given as the address of those who are registered elsewhere as resident students.]

d'Amaral, José, <i>m</i> ,	<i>Tufts College.</i>
Bixby, Herbert Dallas, <i>c</i> ,	<i>Tufts College.</i>
Bowen, James Francis, <i>c</i> ,	<i>Tufts College.</i>
Clark, Alvar Warren, <i>m</i> ,	<i>Tufts College.</i>
Clark, Harriet Mabel, <i>m</i> ,	<i>West Medford.</i>

Chubb, Thomas Briggs, <i>m</i> ,	<i>Tufts College.</i>
Dolbear, Samuel E., <i>c</i> ,	<i>134 Professors Row.</i>
Eriksson, August Isidor, <i>m</i> ,	<i>Tufts College.</i>
Hersey, Arthur William, <i>c</i> ,	<i>Tufts College.</i>
Kingsbury, Walter William, <i>c</i> ,	<i>Tufts Medical School.</i>
Lowe, George Albert Jr., <i>m</i> ,	<i>Tufts College.</i>
Low, William Henry, <i>c</i> , <i>m</i> ,	<i>Tufts College.</i>
Mackernan, William F., <i>m</i> ,	<i>Tufts College.</i>
McCullam, William H., <i>c</i> ,	<i>Somerville.</i>
Ray, Joseph Gordon, <i>m</i> ,	<i>Tufts College.</i>
Saunders, Ernest Alexander, <i>m</i> ,	<i>Tufts College.</i>
Winslow, Evelyn J., <i>c</i> ,	<i>Auburn, Maine.</i>
Wood, Roy Eugene, <i>m</i> ,	<i>Tufts College.</i>
Woodruff, James B. <i>c</i> ,	<i>Winchester.</i>

The Harpswell Laboratory.

Allyn, Louis B., Perkins Institute,	<i>So. Boston.</i>
Bates, George A., D.D.S.,	<i>Auburndale, Mass.</i>
<i>Professor of Histology, Tufts College Dental School.</i>	
Bass, Willard Streeter,	<i>Chicago, Ill.</i>
<i>Francis W. Parker School.</i>	
Davison, Alvin, PH.D.,	<i>Easton, Penna.</i>
<i>Professor of Biology, Lafayette College.</i>	
Gregory, Emily Ray, PH.D.,	<i>Aurora, N. Y.</i>
<i>Professor of Biology, Wells College.</i>	
Kingsley, Mary W.	<i>Tufts College.</i>
Matthews, Albert F., PH.D.,	<i>Chicago, Ill.</i>
<i>Associate Professor of Chemical Physiology,</i>	
<i>University of Chicago.</i>	
Morse, Arthur H.	<i>Tufts College.</i>
Richards, Ralph W.	<i>Waterville, Me.</i>
<i>Olmstead Fellow, Tufts College.</i>	
Ruddick, William Henderson, M.D.,	<i>South Boston.</i>
<i>Fellow by Courtesy, Tufts College.</i>	
Shaw, Ellen Eddy	<i>Tufts College.</i>
Wilcox, M. A., PH.D.,	<i>Wellesley, Mass.</i>
<i>Professor of Zoology, Wellesley College.</i>	
Wilson, C. B., PH.D.,	<i>Westfield, Mass.</i>
<i>Professor of Biology, Westfield Normal School.</i>	
Woods, Frederick A., M.D.,	<i>Brookline, Mass.</i>
<i>Assistant in Embryology, Harvard Medical School.</i>	

Summary.

CORPS OF INSTRUCTION.

Emeritus	2	
President and Professors	46	
Assistant Professors	9	
Instructors	39	
Lecturers	11	
Assistants	17	
Demonstrators	3	
Laboratory Assistants	21	
Total engaged in work of instruction	—	148
Other officers, not previously counted		5

STUDENTS.

COLLEGE OF LETTERS:

Graduate	7	
Senior	45	
Junior	38	
Sophomore	79	
Freshman	95	
Special	47	
	—	311

DIVINITY SCHOOL:

Fourth Year	7	
Third Year	2	
First Year	6	
	—	15

MEDICAL SCHOOL:

Fourth Year	42	
Third Year	69	
Second Year	78	
First Year	115	
Special	18	
	—	322

DENTAL SCHOOL:

Senior	48	
Junior	67	
Freshman	99	
Special	1	
	—	215

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Total number of students	903	
Names appearing twice	19	

DEGREES AND HONORS

1900-1901

Forty-Fifth Annual Commencement.

June 19, 1901.

DEGREES CONFERRED.

HONORARY.

Doctors of Laws.

STEPHEN MOULTON BABCOCK.

EDWIN HURD CONGER.

JOHN STEBBINS LEE.

Literary Doctors.

CHARLES MONTGOMERY SKINNER.

CHARLES RUFUS SKINNER.

Masters of Arts.

CHARLES L. HUTCHINSON.

NEWTON TALBOT.

Doctors of Divinity.

JAMES EDWIN ODGERS.

JAMES FRANKLIN POWERS.

IN COURSE.

Bachelors of Arts.

LENA PEASE ABBE (with Final Honors in Greek and Mathematics and Honorable Mention in Latin and German).

ROGER WELLINGTON ARMSTRONG (with Final Honors in Mathematics).

SARA MITCHELL ARMSTRONG.

FRANK HOWE BENEDICT (with Final Honors in Mathematics).

JOSEPH FRANCIS BERRY.

ALBERT CHESTER BLAISDELL.

ARTHUR MAYNARD BOUTELLE.

ANNIE MARGUERITE BROWNE.

FRANCIS ADAMS DAY (with Honorable Mention in Political Science).

BERTHA ALMA DODGE (with Honorable Mention in Greek).

CARRIE GOULD DODGE (with Final Honors in German).
AUGUST ISIDOR ERIKSSON.
ELLEN FRANCES FARRELL.
JENNIE CLIFTON FROST.
ERNEST GRANGER HAPGOOD (with Final Honors in Political
Science).
AUSTIN FOSTER HAWES.
NOWELL INGALLS (with Honorable Mention in Music).
EDITH BUFFUM KINNE.
GERTRUDE KNIGHT (with Honorable Mention in French).
KATE BROOKS LEWIS (with Final Honors in English).
MARION PUTNAM MACQUINN (with Final Honors in Greek
and Honorable Mention in Latin).
BERTHA ANNAH PERHAM (with Final Honors in French and
Honorable Mention in German).
LESLIE DEAN PIERCE.
MONICA GLASSBOROUGH PIPE.
ELLERY CHANNING POLK.
WILLIAM HYDE PRICE (with Final Honors in History).
ETHEL GARDNER REED (with Final Honors in Latin and
French and Honorable Mention in English).
MARY ALICE RINES (with Final Honors in Greek and German
and Honorable Mention in Latin and French).
CHRISTINE SAYLES.
EDITH MAY SHEARER.
JULIUS RUSSELL SIBLEY.
REGINALD FORSTER SMITH.
CHARLOTTE ADELAIDE TOLMAN.
HARRY CHESTER TURNER.
FLORENCE ROLLINS TUTTLE (with Final Honors in Latin
and Mathematics and Honorable Mention in Greek).
LESLIE CUSTER WELLS.
STANLEY CALEF WILSON.
ALBERT SEWELL WOODWARD.
BERTHA LOUISE WRIGHT.

Bachelors of Philosophy.

FRANK LESLIE HAYFORD.
MERITT JENKINS.

Bachelors of Science in Civil Engineering.

DEAN LEROY CHILSON.
RALPH DANFORTH THOMAS (with Honorable Mention in
Civil Engineering).
JAMES IRWIN TUCKER.

Bachelors of Science in Electrical Engineering.

STEPHEN EDWARD ABBOTT (extra ordinem).

LESTER WRIGHT COLLINS.

FRANK WILLIAM COUGHLIN.

DEXTER REYNOLDS HAWLEY.

WILLIAM MACY JOY (with Honorable Mention in Electricity).

EDWIN BUTLER ROLLINS (with Honorable Mention in Electricity).

JOHN AGUSTINE SEEDE.

GEORGE RAWSON SPOFFORD.

CLARENCE DOANE WALKER.

Bachelor of Science in Mechanical Engineering.

ROBERT EDWARD GOODELL.

Bachelor of Science in Chemistry.

LOUIS SUTLIFFE MURPHY.

Bachelors of Divinity.

PLINY ARUNAH ALLEN, Jr.

FREDERICK WILLIAM ATKINSON.

BERTRAM D. BOIVIN.

WILLIAM CHASE COUDEN.

GEORGE WASHINGTON FULLER.

STANLEY MERCER HUNTER.

WILLIS ALBERT MOORE.

JAMES HENRY PEARDON.

Doctors of Medicine.

WALTER EDWARD BLAINE (*cum laude*).

SATIS C. CHAKRAVARTI.

JOHN HOWARD CHEEVER.

GENEVIEVE CLARK.

MERTON WALLACE CLEMENT.

THOMAS JOSEPH COYNE.

CORNELIUS J. DACEY.

FLORENCE WEST DUCKERING (*cum laude*).

EDWARD CHASE DURGIN.

JOSEPH O. EELLS.

WILFRED GEORGE GRANDISON.

ROBERT CARLETON HALE.

BLANCHE A. HAYES.

WILLIAM WALTER KIRBY.

RICHARD J. LEDWELL.

HARRIET JANE LOVELL.
FREDERICK CORNELIUS MACDONALD.
WILLIS JOHNSON MIDDLETON.
STAR ABNER MOULTON.
LAURA T. MYERS.
JOHN PETER NICKERSON.
MARION HELENA OBEAR.
JANE ORR.
SUSANNA OTIS.
ALBERT ANGELO PASTENE.
OSCAR JAY PRICE.
ALBERT F. RODRICK.
DAVID LIVINGSTON RUNDLETT (*cum laude*).
ALFRED DRAKE SHEA.
WHITMAN GIBSON STICKNEY.
CORA HANNAH THYNG.
LOUISA PAINE TINGLEY.
WILLIAM DUTCHER WHITMAN.
HUBERT JOSEPH WILLIAMS.
JOHN DAWSON ROSWELL WOODWORTH.

Doctors of Dental Medicine.

THOMAS AERY, JR.
LEONARD M. BRADLEE.
WALTER GEORGE BRIDGE.
ALFRED H. BROWN.
LOUIS NATHAN CHAPMAN.
HOWARD W. CHURCH.
FRANCIS CORBETT.
WILLIAM SEGAR COY.
JOHN WILLIAM COYNE.
THOMAS A. CRAWFORD, JR.
CHARLES AUGUSTUS CRONAN.
JOHN MARTIN CURLEY.
WENDELL FREDERICK DAVIS.
WALDO F. DEAN.
L. B. DE LA BRUERE.
JOSEPH FRANCIS DELAHANTY.
EMMANUEL ALOYSIUS DE WAGER.
CORINNE E. DUNCAN.
THOMAS A. FORD.
JULIUS CLARK GALLUP, JR.
WILLIAM H. J. GORMAN.
ROBERT FERGUSON HAYDEN.

JEPPE CHRISTIAN JEPSEN.
BLANCHE MARGUERITE KENNEY.
JEAN EUGENE KENSWIL.
ALFRED ELMORE KNIGHT.
GEORGE WASHINGTON LEITH.
HENRY LELAND.
MURRAY F. LUCE.
GEORGE MARSHALL McELHINNEY.
EDWARD THOMAS McGOURTY.
FREDERICK JACOB McTEER.
WILLIAM LOUIS MERRILL.
WILLIAM ARTHUR NEALS.
WOODBURY FRANKLIN NICHOLS.
ARTHUR PARKER NUTE.
JOHN EDWARD CROWLEY O'DONNELL.
LESTER PARKER.
CHARLES MARDEN PROCTOR.
CLARENCE ADAMS RACE.
CLAUDE MAXWELL RICHMOND.
WALTER NELSON ROBERTS.
FREDERICK THOMAS SHERRY.
GEORGE AUSTIN SMITH.
JAMES FRANCIS SMITH.
HUGO SHERWOOD THOMSON.

Masters of Arts.

WILLIAM CHASE COUDEN.
WENTWORTH ROSCOE LIBBY.
EDWARD EVERETT MARGGRAF.
WILLIS ALBERT MOORE.
WILLIAM HYDE PRICE.
MARY ALICE RINES.
LESLIE CUSTER WELLS.

Masters of Science.

GEORGE ALEC HARWOOD.
RAYMOND J. SEYMOUR.
FREDERIC EDWARD TOWN.

Doctor of Philosophy.

WILLIAM RISBY WHITEHORNE.

AWARDS OF PRIZES, 1900-1901.

Goddard Prize in Latin.

ISABEL HOLMES.

Goddard Prize in Greek.

MARY ALICE RINES.

Goddard Prize in Mathematics.

RAYMOND KURTZ MORLEY.

Greenwood Prize Scholarship in Oratory.

GUY ELWOOD MARION.

Prize Scholarship of the Class of 1898.

ISABEL HOLMES.

Rhetorical Prizes.

First Division.

JAMES JOHN QUILL (1).

RICHARD BRADFORD COOLIDGE (2).

Second Division.

RUTH PAUL CAPEN (1).

CHANDLER MASON WOOD (2).

Third Division.

ARTHUR MAYNARD BOUTELLE (1).

FORREST SUMNER LUNT (2).

Greenwood Prizes in Oratory in the Divinity School.

CHARLES N. MYERS.

GEORGE WASHINGTON FULLER.

WILLIAM CHASE COUDEN.

1

2

3

4

5

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TUFTS COLLEGE FROM POWDER HOUSE SQUARE

CATALOGUE
OF
TUFTS COLLEGE

1902-1903

TUFTS COLLEGE PRESS

1902

TUFTS COLLEGE PRESS
H. W. WHITTEMORE & CO.
1902

Calendar

1902

1903

SEPTEMBER							JANUARY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6						1	2
7	8	9	10	11	12	13	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24
28	29	30					25	26	27	28	29	30	31
OCTOBER							FEBRUARY						
			1	2	3	4	1	2	3	4	5	6	7
5	6	7	8	9	10	11	8	9	10	11	12	13	14
12	13	14	15	16	17	18	15	16	17	18	19	20	21
19	20	21	22	23	24	25	22	23	24	25	26	27	28
26	27	28	29	30	31								
NOVEMBER							MARCH						
						1	1	2	3	4	5	6	7
2	3	4	5	6	7	8	8	9	10	11	12	13	14
9	10	11	12	13	14	15	15	16	17	18	19	20	21
16	17	18	19	20	21	22	22	23	24	25	26	27	28
23	24	25	26	27	28	29	29	30	31				
30													
DECEMBER							APRIL						
	1	2	3	4	5	6				1	2	3	4
7	8	9	10	11	12	13	5	6	7	8	9	10	11
14	15	16	17	18	19	20	12	13	14	15	16	17	18
21	22	23	24	25	26	27	19	20	21	22	23	24	25
28	29	30	31				26	27	28	29	30		

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. The post-office address is — TUFTS COLLEGE, MASS.

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Calendar

1902

- SEPT. 18. College year begins (all departments except the Medical and Dental Schools), Thursday morning.
- SEPT. 20. Regular college exercises begin.
- SEPT. 21. Russell Lecture, Sunday, 7.30 P.M.
- OCT. 1. Lectures begin in the Medical and Dental Schools, Wednesday.
- NOV. 26. Thanksgiving recess begins, Wednesday, at 1 P.M.
- NOV. 30. Thanksgiving recess ends, Sunday evening.
- DEC. 3. Announcement of Commencement Parts and Prizes.
- DEC. 23. Christmas recess begins, Tuesday evening.

1903

- JAN. 6. Christmas recess ends, Tuesday evening.
- JAN. 29. Final examinations begin in the College of Letters, Thursday.
- FEB. 7. End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
- FEB. 9. Second half-year begins, Monday.
- FEB. 22. Washington's Birthday. College exercises suspended.
- APRIL 1. Spring recess begins, Wednesday evening.
- APRIL 8. Spring recess ends, Wednesday evening.
- APRIL 19. Patriots' Day. College exercises suspended.
- MAY 15. Prize Reading in the College of Letters, Friday, 3 P.M.
- MAY 26. Prize Reading in the Divinity School, Tuesday, 3 P.M.
- MAY 30. Memorial Day. College exercises suspended.
- JUNE 2. Final examinations begin in the College of Letters, Tuesday.
- JUNE 8. Entrance examinations at the Medical and Dental Schools, Monday.
- JUNE 12. Class Day, Friday.
- JUNE 14. Baccalaureate Sermon, Sunday, 4.30 P.M.
- JUNE 17. Forty-seventh Annual Commencement, Wednesday.

First Examination for Admission to the College of Letters

- JUNE 18. Algebra, 9 to 10.30 A.M.
English, 10.30 A.M. to 12.30 P.M.
Plane Geometry, 2 to 4 P.M.
Physics, 4 to 5 P.M.

- Drawing, 4 to 6 P.M.
- JUNE 19. Elementary and Advanced Latin, 9 to 12 A.M.
 Advanced Mathematics, 9 to 11 A.M.
 Natural History (two subjects), 11 A.M. to 1 P.M.
 History, 2 to 4 P.M.
 Chemistry, 4 to 5 P.M.
- JUNE 20. Elementary and Advanced Greek, 9 to 12 A.M.
 Intermediate and Advanced German and French, 9 to 11 A.M.
 Elementary German and French, 11 A.M. to 12.30 P.M.
- JUNE 22 to SEPT. 15. Session of the Harpswell Laboratory.
- JULY 6 to AUGUST 15. Session of the Summer School at Tufts College.

Second Examination for Admission to the College of Letters

- SEPT. 14. Elementary and Advanced Greek, 9 to 12 A.M.
 Intermediate and Advanced German and French, 2.30 to 5 P.M.
 Elementary German and French, 1 to 2.30 P.M.
- SEPT. 15. Algebra, 9 to 10.30 A.M.
 English, 10.30 A.M. to 12.30 P.M.
 Plane Geometry, 2 to 4 P.M.
 Physics, 4 to 5 P.M.
 Drawing, 4 to 6 P.M.
- SEPT. 16. Elementary and Advanced Latin, 9 to 12 A.M.
 Advanced Mathematics, 9 to 11 A.M.
 Natural History (two subjects), 11 A.M. to 1 P.M.
 History, 2 to 4 P.M.
 Chemistry, 4 to 5 P.M.
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- SEPT. 16. Examination for Admission to the Divinity School, in Miner Hall, Beginning at 9 A.M.
- SEPT. 17. College year begins, Thursday morning.
 Registration of all students at the Secretary's office.
 Major departments and plans of study for the first half-year must be reported before noon of this day.
- SEPT. 19. Regular College exercises begin.
- SEPT. 20. Russell Lecture, Sunday.
- OCT. 3. Entrance examinations at the Medical and Dental Schools, Saturday.
- OCT. 6. Lectures begin in the Medical and Dental Schools, Tuesday.
- NOV. 25. Thanksgiving recess begins, Wednesday, at 1 P.M.
- NOV. 29. Thanksgiving recess ends, Sunday evening.

Historical Sketch.

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to

it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

“No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain.”

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first presi-

dent of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of Electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natur-

al History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the

work in political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Mr. Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time,

largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to

determine what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buidings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers, to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote

the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A. B., S. B., or Ph. B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committee, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

THE ADMINISTRATION
OF THE COLLEGE

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HOSEA MORRILL KNOWLTON

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NEWTON TALBOT, 30 West Street, Boston

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BYRON GROCE	SUMNER ROBINSON
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The Overseers

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Secretary

CHARLES WINFIELD PARMENTER, A.M., Ph.D.

Term expires in 1903

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EDWIN GINN, A.M., Litt.D.

FRANK MORTIMER HAWES, A.M.

FRANK THOMAS DANIELS, A.M.B.

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FRANK OTIS MELCHER, C.E.

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MINTON WARREN, Ph.D., LL.D.

TUFTS COLLEGE

Term expires in 1906

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SAMUEL WARREN MENDUM, A.M.

MILTON GERRY STARRETT, A.M.B.

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- GEORGE THOMSON KNIGHT, A.M., D.D. . . . 114 Professors Row
Packard Professor of Christian Theology, and Secretary of the Divinity School
- EDWARD OSGOOD OTIS, A.B., M.D. 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

* The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course.

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Instructor in Clinical Dentistry
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Professor of General Chemistry
- WARREN SAMUEL WOODBRIDGE, A.M., B.D. 32 Pearl St., Medford
Woodbridge Professor of Applied Christianity
-
- Pearson Professor of Geology and Mineralogy*
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Professor of Diseases of the Nervous System
- HAROLD WILLIAMS, A.B., M.D. 528 Beacon St., Boston
*Professor of the Theory and Practice of Medicine, and Dean of the
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Professor of Ophthalmology
- SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
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- HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of the Theory and Practice of Medicine
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Warren Chambers, 419 Boylston St., Boston
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eering.*
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Professor of Clinical Surgery 31 Massachusetts Ave., Boston
- HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston
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- FREDERIC LAFAYETTE JACK, M.D., . . . 215 Beacon St., Boston
Professor of Otology
- JOSEPH KING KNIGHT, D.D.S. Hyde Park
Professor of Prosthodontia
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CHARLES BALFOUR DARLING, A.B., M.D.
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JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass.
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— Requirements for Admission

Candidates will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

Candidates for the degree of Bachelor of Arts or of Bachelor of Science, except in the Department of Engineering, must have received adequate preparation in certain required subjects, as follows* :—

The Primary Group

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.
2. No subject classified as “advanced” shall be offered without the corresponding elementary subject; nor shall any language subject be counted as “elementary” in both the Primary and the Secondary Group.

* For detailed statement of the requirements in the Primary Group, see pages 41 to 45.

The Secondary subjects and their assigned units are as follows*:—

The Secondary Group

ELEMENTARY

Greek, 4
 Latin, 6
 French, 4
 German, 4
 Chemistry, 1
 Physics, 1
 Botany, 1 or 2
 Zoology, 1 or 2
 Geology, 1 or 2
 Physiology, 1 or 2

ADVANCED

English, 2
 Greek, 2
 Latin, 2
 French, 2
 German, 2
 History, 2
 Advanced Algebra, 1
 Trigonometry, 1
 Solid Geometry, 1
 Chemistry, 2
 Physics, 2

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Engineering: the Primary Group

Elementary English;
 One Elementary Foreign Language;
 Algebra;
 Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:—

Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 41 to 51.

* For detailed statement of the requirements in the Secondary Group, see pages 45 to 51.

The Primary Group

I. Elementary English*.

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

1903, 1904, 1905,—Shakespeare's *Merchant of Venice* and *Julius Caesar*; the *Sir Roger de Coverley Papers* in the *Spectator*; Goldsmith's *Vicar of Wakefield*; Coleridge's *Rime of the Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *Princess*; Lowell's *Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

1903, 1904, 1905,—Shakespeare's *Macbeth*; Milton's *L'Allegro*, *Il Penseroso*, *Comus*, and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

II. One of the following Languages:

I. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen*; Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges*; Kohlrausch, *Das Jahr 1813*; Schiller, *Der dreissigjährige Krieg*, *Wilhelm Tell*, *Maria Stuart*, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*, *Egmont*, *Iphigenie*; Lessing, *Minna von Barnhelm*. At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(b) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings

of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Books I and II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple

Attic prose, involving the use of such words, constructions, and idioms only as occur in the prescribed portion of Xenophon.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's *Anabasis*, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to social and political development. Larned's *History of England* and Montgomery's *Leading Facts of English History* will indicate the character of the work expected.

4. The history and government of the United States. Such texts as McLaughlin's *History of the American Nation*, Johnston's or Channing's *History of the United States*, and Fiske's *Civil Government* should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the textbook should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the

Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(a) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(b) Plane Geometry, including the solution of simple original exercises and numerical problems.

The Secondary Group

The subjects and their values in entrance units are as follows:—

I. Advanced English.

Two entrance units.

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

II. Elementary German.

Four entrance units.

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French.

Four entrance units.

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin.

Six entrance units.

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek.*Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German.*Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(a) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (a). At least one-half of the amount read should be nineteenth-century prose.

(b) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French.*Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(a) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of

classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin.

Two entrance units.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should include Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

IX. Advanced Greek.

Two entrance units.

The examination will be adapted to the proficiency of those

who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(a) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(b) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's *Anabasis*, or their equivalent in Attic prose, and six books in Homer's *Iliad*, or their equivalent in the *Odyssey*. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

X. Advanced History.

Two entrance units.

One of the following:—

1. The history of Greece and Rome, as described on page 44, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 44, for those only who have offered Greek and Roman History as primary subjects.

3. The history of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a year's detailed study of a limited period within that field.

Each of these subjects requires two years' study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

XI. Advanced Mathematics.

1. Plane Trigonometry, with its applications.

One entrance unit.

2. Solid Geometry. *One entrance unit.*
3. Advanced Algebra. *One entrance unit.*

XII. Physics.

(a) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(b) ADVANCED. *Two entrance units.* In addition to (a), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Burgin's Text Book of Physics.

XIII. Chemistry.

(a) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory notebook.

(b) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book mentioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

XIV. Natural History.

One or two entrance units.

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five

periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Leconte, Scott, Tarr.

XV. Freehand Drawing.

One entrance unit.

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

XVI. Mechanical Drawing.

One entrance unit.

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in this respect. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in the subject only on examination.

XVII. Shopwork.

One entrance unit.

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced standing is given in this subject only on examination.

GENERAL INFORMATION RELATING TO ADMISSION

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 5 and 6.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations.

Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools that have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must state the time devoted to each subject offered for admission, the standing of the student according to the school record, and such facts in regard to the method and means of instruction as the department examiners may call for.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year, and any certificate from a school not on the approved list of the College should be accompanied by the necessary information in regard to courses and facilities of instruction, written upon the official blank of the College, in order to be considered by the Committee on Admission.

Blank forms for certificates, and for application from secondary schools, will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

☞ Beginning January 1, 1904, no certificate will be accepted from any school in New England which has not been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Boston University, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

Requirements for Degrees

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Throughout the courses students have large liberty in choosing their work, but they are brought into personal advisory relations with the major instructors, who arrange and guide a considerable portion of it, after its general direction has been determined. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS FOR A.B.*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

(2) The program of prescribed studies is as follows:—

	TERM HOURS
LANGUAGES (Latin, Greek, French, German, Hebrew : each student to take <i>three</i>)	18
ENGLISH	6
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology ; each student to take <i>one or two</i>)	12
MENTAL AND MORAL SCIENCE* (each student to take <i>three</i>)	12
PHYSICAL TRAINING	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except Mathematics and English some choice is allowed the student.

The program of the student in the first year will be made up from the prescribed groups, except by special permission of the Faculty.

(3) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work. The major department and the plan of work for the first half-year must be reported by the student, in the proper form, upon registration on the opening day of the College year.

(4) Acting under the advice of the instructor in his major department, the student will make up a program of eighteen term hours in collateral subjects; that is, subjects tending to strengthen and assist his work in his major. The student's major instructor is to be his official adviser on general matters relating to his college course.

* Of the five subjects, Logic, the History of Philosophy, Economics, History, and Public Law, the student must take at least three—three term hours of each. The remaining three term hours may be chosen from the two other subjects or from the advanced work in the three subjects at first selected.

(5) The remaining thirty-six term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects.

(6) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

Summary

	TERM HOURS
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	36
	<hr/> 128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

* An acceptable Commencement part counts as an elective in the second half of the Senior year.

BALLOU HALL

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments :

ENGLISH	ECONOMICS AND
GERMAN	SOCIOLOGY
FRENCH	MATHEMATICS
LATIN	PHYSICS
GREEK	CHEMISTRY
PHILOSOPHY	BIOLOGY
HISTORY AND	ENGINEERING
PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. Subjects count in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by figures in parenthesis following the proposed hour: thus (1) means "first half-year," (2) means "second half-year."

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours follows the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND ASSISTANT
PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. In the advanced classes the seminary method is employed. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

SUBJECTS

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45.* (1)

PROFESSOR MAULSBY AND MR. COOLIDGE.

*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45.* (2)

ASSISTANT PROFESSOR WHITTEMORE AND MR. COOLIDGE.

*8. The Theory and Practice of Composition. Text-book, themes, conferences. PROFESSOR MAULSBY.

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

*3. Daily Composition. *Tu., 3.00. (1) Counting as two hours.*
PROFESSOR SHIPMAN.

*4. The Principles of Expository Writing are discussed, and specimens from eminent authors are studied. The written work consists of two themes each week. *Tu., 3.00. (2) Counting as two hours.*
PROFESSOR SHIPMAN.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week. *Th., 3.00. (1) Counting as two hours.*
PROFESSOR SHIPMAN.

*6. Essays, with special attention to the construction of extended discourse. Weekly papers, plans, free discussion, individual criticism. *Th., 3.00. (2) Counting as two hours.*
PROFESSOR SHIPMAN.

English 3, 4, 5, and 6 are open to students who have attained at least Grade C in English 1 and 2.

7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45. (2)*
PROFESSOR MAULSBY.

9. English Lyrics of the Sixteenth and Seventeenth Centuries. *Mon., Wed., Fri., 11.45. (2)*
ASSISTANT PROFESSOR WHITTEMORE.

10. The English Bible. *Tu., Th., Sat., 10.45. (1)*
ASSISTANT PROFESSOR WHITTEMORE.

*11. General View of English Literature. Lectures, papers, examinations, and required reading. *Mon., Fri., 2.00.*
PROFESSOR MAULSBY, ASSISTANT PROFESSOR WHITTEMORE, PROFESSOR WADE, AND PROFESSOR KNIGHT.

English 11 is designed as an introduction to the study of special periods.

[**12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.*
PROFESSOR MAULSBY.]

[13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45. (1)*
ASSISTANT PROFESSOR WHITTEMORE.]

English 13 will be given in 1903-1904.

[14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Tu., Th., Sat., 8.45.* (2)

PROFESSOR MAULSBY.]

English 14 will be given in 1903-1904.

[15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* ASSISTANT PROFESSOR WHITTEMORE.]

17. Shakespeare. Reading of selected plays, lectures, examinations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR MAULSBY.

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (2)

ASSISTANT PROFESSOR WHITTEMORE.

English 17 should precede English 18.

[19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems, examinations. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 19 may be dropped at the end of the first half-year.

**20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, Beowulf will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and Composition. *First half-year. Counting as three hours.* ASSISTANT PROFESSOR WHITTEMORE.

24. History of English Criticism. Discussion, examinations, essays. *Tu., Th., Sat., 11.45.* (2) PROFESSOR SHIPMAN.

[25. Development of the Drama. *Mon., Wed., Fri., 9.45.*

PROFESSOR MAULSBY.]

26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon-preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

ORATORY

ASSISTANT PROFESSOR WHITTEMORE

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for specializing, during two successive years, either in dramatic reading or in senatorial oratory. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

SUBJECTS

1. The Principles of Oratory Exemplified in Practice. *Th., 2.00.*

ASSISTANT PROFESSOR WHITTEMORE.

2. Individual Presentation of Standard Poetry and Prose. *Wed., 11.45.*

ASSISTANT PROFESSOR WHITTEMORE AND MR. TARBOX.

4. Dramatic Rendering. Study and delivery of scenes from the standard drama. The possible public presentation of a play. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

6. The Preparation and Delivery of Original Speeches. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th., 2.00. (2)*

PROFESSOR MAULSBY.

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

8. Extemporaneous Speaking. *One hour a week.*

ASSISTANT PROFESSOR WHITTEMORE.

Oratory 8 is open to those who have taken Oratory 6.

GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it, when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Mon., Wed., Fri., 9-45.* MR. COLWELL.

German I is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such

works as Baumbach, *Der Schwiegersohn*; Gerstäcker, *Irrfahrten*; Seume, *Mein Leben*; Ebner Eschenbach, *Die Freiherren von Gemperlein*. *Mon., Wed., Fri., 8.45.* MR COLWELL.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

****3.** First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, *Minna von Barnhelm*; Schiller, *Die Jungfrau von Orleans*; Goethe, *Hermann und Dorothea*. *Tu., Th., Sat., 8.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

****3B.** German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. *Tu., Th., 8.45.*

MR. COLWELL.

German 3B is offered to students who have satisfactorily completed German 2, or its equivalent.

4. Schiller and Goethe. *Maria Stuart*; *Wallenstein*; *Egmont*; Robertson's Correspondence between Goethe and Schiller; lyrics; collateral reading in historical prose. *Tu., Th., Sat., 11.45.* MR. COLWELL.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. *Nathan der Weise*, *Emilia Galotti*, *Laocoon*; Tasso, *Iphigenie*, *Faust*, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, *Mittelhochdeutsches Lesebuch*. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY.

FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement

of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.*

PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate French. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's *Colomba* and Sandeau's *Mademoiselle de la Seiglière*. *Mon., Wed., Fri., 8.45.*

PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.*

PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century. Crane's *Société Française au XVII^e Siècle*; Molière, *Les Précieuses Ridicules*, *Les Femmes Savantes*; Boileau, *Les Héros de Roman*; Madame de Sévigné; Madame de la Fayette; Rostand, *Cyrano de Bergerac*; collateral reading from modern critics. *Mon., Wed., Fri., 2.00.*

PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri., 3.00.*

PROFESSOR LEWIS.

Either half-year may count as a half-subject.

[6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Demogeot and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Tu., Th., Sat., 10.45.* PROFESSOR FAY.]

ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature.

SUBJECT

1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tu., Th., Sat., 10.45.* PROFESSOR FAY.

LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and two or more composition courses are offered every

year, and a number of other subjects, such as Latin 8 and 9, will be given, with due announcement, at intervals of two or more years. Courses 3, 4, 7, and all designated by numbers above 7, are suitable for graduate students. Such students will, however, be expected to do an extra amount of work in these subjects, and may be required to prepare theses, or make other special investigations.

SUBJECTS

*1. Cicero, *De Senectute*, or *De Amicitia*; Vergil, *Eclogues*; Selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division a, 8.45; Division b, 9.45.* PROFESSOR DENISON.

Latin 1 is introductory to all later subjects. Latin 5 is designed especially for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, *Cena Trimalchionis*; Horace, *Odes* and *Epodes*; Tacitus, *Germania* or *Agricola*; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.*

PROFESSOR DENISON.

Latin 2 is open to students who have completed Latin 1.

3. Juvenal, principal *Satires*; Martial, selected *Epigrams*; Suetonius, *Life of Augustus*; Tacitus, selections from the *Annals*; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. They will touch at many points the work of Latin 9. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.

[4. Horace, *Satires* and *Epistles*; Plautus, two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.*

PROFESSOR DENISON.]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu., 2.00.* PROFESSOR DENISON.

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention will be paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th., 2.00.* PROFESSOR DENISON.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.*

PROFESSOR DENISON.

[8. Catullus and the Elegiac Poets. *Mon., Wed., Fri., 4.00. (1) or (2)*

PROFESSOR DENISON.]

9. The Private Life of the Romans. Lectures and collateral reading. Short investigations by the students. Latin 9 is open to those who have completed Latin 1, if taken as supplementary to other work in Latin. There will be full illustration with the stereopticon. *Mon., Wed., Fri., 4.00. (1)*

PROFESSOR DENISON.

The work of Latin 9 will have close relation to much of the reading of Latin 3.

10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. These authors will be studied from a literary point of view. Latin 10 is open to students who have completed Latin 1. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR DENISON.

GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Forman's First Greek Book; Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily, 9.45.*

PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

****2.** Xenophon, or Plato; Herodotus; Homer, the Odyssey; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek. The works read in Greek 2 are chosen primarily to help the student to a mastery of the language, and to give those who can carry the study of Greek no further some knowledge of the branches of Greek literature treated. The literary characteristics of the authors read will be dwelt upon, and lectures on suitable topics will be given.

3. Lysias, selected Orations; Antiphon, Herodes and Choreautes; Demosthenes, On the Crown; Euripides, Bacchantes; Aeschylus, Seven against Thebes; reading at sight. *Tu., Th., Sat., 11.45.*

PROFESSOR WADE.

The works read in Greek 3 vary from year to year. The aim of this subject is to present systematically the dramatic and forensic literature of classical Greece. The reading is accompanied by lectures.

4. Theocritus, Idylls and Epigrams; Pindar, Olympian and Pythian Odes; Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tu., Th., Sat., 8.45.* PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*

PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

****6.** Greek Composition; practice in sight reading. *Tu., 4.00.*

PROFESSOR WADE.

Greek 6 may be taken by anyone who has had the equivalent of Greek 1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition ; reading at sight ; outside study of some Greek author, including the preparation of an essay. *Th., 4.00.*

PROFESSOR WADE.

Greek 7 is intended primarily for Sophomores making Greek their major. Other students properly qualified will be admitted.

8. Advanced Subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. A reading knowledge of French and German is necessary. The preparation of a thesis is required. Properly qualified undergraduates may be admitted.

PROFESSOR WADE.

CLASSICAL ARCHAEOLOGY

The fields of Greek and Roman Archaeology and Art are so intimately connected that they cannot adequately be treated separately. The following related subjects are therefore offered with a view to presenting a reasonably complete survey of ancient architecture, painting, and sculpture.

SUBJECTS

[1. Greek, Roman, and Etruscan Architecture ; Ancient Painting.
Mon., Wed., Fri., 4.00. (1) PROFESSOR DENISON.]

[2. Greek and Roman Sculpture. *Mon., Wed., Fri., 4.00. (2)*
PROFESSOR WADE.]

The work in both subjects will consist of lectures, collateral reading, and papers. There will be full illustration with photographs, stereopticon, and specimens.

HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

SUBJECTS

1. The elements of grammar ; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Three hours a week.*

PROFESSOR WOODBRIDGE.

2. Syntax ; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE..

PHILOSOPHY*

PROFESSOR CUSHMAN

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic is open to him. If he wishes to take any of the other subjects in the department, he must begin with the history of philosophy. In all cases where there is opportunity the department advises the student to begin with the history of philosophy, which is its primer. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

[1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism,

* The departments of Philosophy, History and Public Law, and Economics and Sociology constitute the group of Mental and Moral Science, in which twelve term hours of work are required for A.B. See page 54.

neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (1)

PROFESSOR CUSHMAN.]

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.* (1)

PROFESSOR CUSHMAN.

Philosophy 1 and 2 are given at the same hour on alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45.* (1)

PROFESSOR SHIPMAN.

ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45.* (2)

PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

**5. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45.* (2)

PROFESSOR CUSHMAN.

Philosophy 5 regularly follows Philosophy 1 or 2.

6. Ethics and Literary Criticism: the Theory of Morals considered constructively, and with special reference to literary criticism. The first part of Philosophy 6 is devoted to a discussion of the principal problems in ethics, with a review of the leading historical theories, to the end of an independent construction on the part of the student. In the last part of the course, to further this end and to help students of literature in criticism, the class will apply and test such constructed theory by criticising characters found in literature. The course is especially arranged for such students. Lectures, text-book. *Mon., Wed., Fri., 10.45.*

PROFESSOR CUSHMAN.

[7. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.*

PROFESSOR CUSHMAN.]

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-con-

sciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

Subjects 6 and 7 are given at the same hour in alternate years.

[8. Aesthetics: the theory of Beauty, with illustrations from the fine arts; historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45.* (1) PROFESSOR CUSHMAN.]

9. Ethics, practical: contemporary problems, education, charities, temperance, socialism. *Tu., Th., Sat., 10.45.* (2) PROFESSOR TOUSEY.

Philosophy 9 must be preceded by Philosophy 6.

10. The Philosophy of Religion: classification of theological questions, with critical and constructive work by the class; lectures; wide reading. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR KNIGHT.

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45.* (2) PROFESSOR CUSHMAN.]

Philosophy 11 will be given in 1904-1905.

12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45.* (2)

PROFESSOR CUSHMAN.

[13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45.* (2).

PROFESSOR CUSHMAN.]

Philosophy 13 will be given in 1903-1904.

14. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.*

PROFESSOR TOUSEY.

PEDAGOGICS

SUBJECT

[1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45.* (2)

PROFESSOR CUSHMAN, ASSISTED BY TEACHERS
FROM LEADING SECONDARY SCHOOLS.]

HISTORY AND PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 9 offer to properly qualified students opportunity to make a more detailed study of limited periods in the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 10, 11, 11A, and 11B deal with Jewish and ecclesiastical history, and the comparative history of religions. History 12 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects, dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A

* See note, page 70.

knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes. *Mon., Wed., Fri., 10.45.* PROFESSOR EVANS AND MR. WOOD.

History 1 must precede all other subjects in History, except History 2, which it may either precede or accompany. History 1 and 2 are not open to Freshmen, and will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES.

3. American History from 1750 to the Civil War. Text-book, lectures, and themes. *Mon., Wed., Fri., 10.45.* PROFESSOR BOLLES.

[4. Constitutional History of England. A study of the growth of the constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.]

[5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the Thirty Years' War, the rise of Russia, the rule of Richelieu and Mazarin, the age of Louis XIV, the creation of Prussia and the Ancient Régime. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.]

History 4 and 5 will not be given in 1902-1903, but may be expected in 1903-1904.

6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00. (1)* PROFESSOR EVANS.

7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00. (2)* PROFESSOR EVANS.

History 6 and 7 will not be given in 1903-1904.

[8. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tu., Th., 3.00.* (1)

PROFESSOR BOLLES.]

[9. English Social Life. Lectures and illustrations. *Tu., Th., 3.00.* (2)

PROFESSOR BOLLES.]

10. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.*

(1)

PROFESSOR KNIGHT.

11. Ecclesiastical History,—History of the Church, of the Sects, and of Doctrines, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45, and a fourth hour, to be arranged.*

PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

11A. History of the Jews before Christ. A study of the political relations, institutions, and other literature of the Jewish people. *Mon., Wed., Fri., 4.00.*

PROFESSOR HARMON.

11B. History of the Beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 9.45.* (1)

PROFESSOR HARMON.

12. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1902-1903 the subject of study will be the constitutional history of the Civil War. History 12 is open only to such students, making History their major subject, as receive the special permission of the instructor. Full subject, counting as six term hours; weekly meetings of two hours each.

PROFESSOR EVANS.

Public Law and Administration

SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, *The American Commonwealth*, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (1)

PROFESSOR EVANS.

Public Law 1 must be preceded by History 1, and must precede all other courses in this group, except Public Law 3. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1, 2, and 3 in their third year.

2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR EVANS.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tu., Th., Sat., 9.45.* (1) PRESIDENT CAPEN.

Public Law 3 must be preceded by History 1.

4. European Government and Politics. A study of the constitutions of the chief European States, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.

5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (2) PROFESSOR EVANS.

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.]

[7. Elements of Jurisprudence. A study of the leading juristic principles, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 8.45.* (2) PROFESSOR EVANS.]

ECONOMICS AND SOCIOLOGY*

PRESIDENT CAPEN AND PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Economics and Sociology is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with public charities.

To these ends instruction is offered at present in seven different subjects. Economics 1 is designed to lay the foundation

* See note, page 70.

for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics should enter upon the work in the second year of their college course. A knowledge of general, constitutional, and political history is useful. The character of the work in the advanced courses is briefly outlined in connection with the following statement of subjects.

SUBJECTS

1. Elements of Economics. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on trade unions, co-operation, socialism, and finance. Bullock's Introduction to the Study of Economics is used as a guide. *Tu., Th., Sat., 10.45.*

PROFESSOR METCALF.

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the industrial revolution and the rise of the factory system; growth of foreign trade; the tendency toward industrial centralization; speculation and commercial crises. Lectures, collateral reading, and reports. *Mon., Wed., Fri., 9.45. (1)*

PROFESSOR METCALF.

3. Practical Sociology. The nature and methods of social science. Economics 3 is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Mon., Wed., Fri., 9.45. (2)*

PROFESSOR METCALF.

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. Adams's Public Finance is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45. (1)*

PROFESSOR METCALF.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. *Tu., Th., Sat., 8.45. (2)*

PROFESSOR METCALF.

6. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 6 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00. (2)*

PROFESSOR METCALF.

7. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructors.* PRESIDENT CAPEN AND PROFESSOR METCALF.

MATHEMATICS

PROFESSOR BROWN AND PROFESSOR WREN

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

The first subject constitutes the required work in mathematics, and should be taken in the Freshman year. Students intending to pursue work in mathematics beyond the first year should take in order subjects 1, 3, 6, 7, and 8, which open the way to all others, and constitute the main framework of their studies. More comprehensive knowledge of algebra, trigonometry, and analytics than is required for entering upon subsequent branches may be obtained by electing subjects 2, 4, and 5, respectively. Juniors and Seniors who have mastered the calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

SUBJECTS

1. College Algebra; Solid Geometry; Plane Trigonometry; Applications of Plane Trigonometry. *Tu., Th., Sat.: Division a, 8.45; Division b, 9.45.* MR. RANSOM.

2. Advanced Algebra. Theory of Equations and Elements of Determinants. *Tu., Th., Sat., 11.45. (2)* PROFESSOR BROWN.

3. Plane Analytic Geometry. *Tu., Th., Sat., 9.45.* (1)
PROFESSOR BROWN.
4. Advanced Trigonometry. *Tu., Th., Sat., 11.45.* (1) MR. RANSOM.
5. Higher Plane Curves; Analytic Geometry of Three Dimensions.
Tu., Th., Sat., 9.45. (2) PROFESSOR BROWN.
6. Differential and Integral Calculus. *Mon., Wed., Fri., 11.45.* (2)
PROFESSOR BROWN.
7. Differential and Integral Calculus (continued). *Mon., Wed., Fri., 11.45.* (1)
PROFESSOR BROWN.
8. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45.* (2)
PROFESSOR BROWN.
9. Determinants. *Mon., Wed., Fri., 3.00.* (1) MR. RANSOM.
10. Differential Equations. *Two hours for the second half-year.*
PROFESSOR WREN.
11. Method of Least Squares. *Three hours for the second half-year.*
PROFESSOR WREN.
12. Quaternions. *Three hours for the first half-year.*
PROFESSOR WREN.
13. The Theory of the Potential Function. *Three hours for the second half-year.*
PROFESSOR WREN.
14. Topics from the History of Mathematics. *Wed., 3.00.* (2)
MR. RANSOM.

PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book is used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

An elective course is offered of about twenty-five lectures upon the relations of physics to other branches of natural science, introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in physics. Spencer's *First Principles* is read, and its subject-matter thoroughly discussed.

In the physical laboratory, beginners are given Stewart and Gee's *Practical Physics*, first volume, for a guide. They work for the most part independently, and each pursues a given subject till satisfactory results are obtained. Glazebrook and Shaw's *Practical Physics* is followed on the subjects of sound, heat, and light, Pickering's *Manipulation* and Kohlrausch's *Measurements* being also used to a limited extent. In electricity and magnetism, Stewart and Gee's second volume is mainly followed, supplemented, in the case of engineering students, by parts of Gray's *Absolute Measurements* and Kempe's *Testing*. In all laboratory work each student records methods and results in a suitable note-book, and is encouraged to do a few things well rather than to go carelessly over a larger ground. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing Physics for their prescribed science subject, and is introductory to other subjects in Physics. *Mon., Wed., Fri., 10.45.*

PROFESSOR DOLBEAR.

2. Electricity. Thompson's *Elementary Lessons in Electricity and Magnetism*. Lectures and recitations. *Mon., Wed., Fri., 11.45. (2)*

ASSISTANT PROFESSOR H. G. CHASE.

3. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Tu., Th., 2.00 to 5.00. (2) Counting as three term hours.*

ASSISTANT PROFESSOR H. G. CHASE.

4. Electricity: Theory of Measurements. *Mon., Wed., Fri., 11.45. (1)*

ASSISTANT PROFESSOR H. G. CHASE.

5. Electrical Laboratory: Simple Measurements and Tests. *Counting*

as five term hours. *Tu., Th., 9.45 to 12.45; Fri., 9.45 to 11.45; also, for the first half-year, lecture, Wed., 9.45.*

ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

6. Relation of Physics to Sociology. Lectures. *Tu., Th., 4.00. (1)*
PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tu., Th., 4.00. (2)*
PROFESSOR DOLBEAR.

[8. Telephone and Telegraph. *Tu., Th., 9.45. (2)*
PROFESSOR DOLBEAR.]

ASTRONOMY

SUBJECT

1. Recitations and lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tu., Th., 3.00. (1)*

PROFESSOR DOLBEAR.

CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The courses of lectures on metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of organic chemistry begins with a course of lectures, illustrated by experiments and recitations, which cover the general principles and methods, and include description of the most important organic compounds. For those who wish to specialize in this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the

student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special course in chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Special Course in Chemistry.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work. Counting as six term hours.*

PROFESSOR DURKEE AND DR. GARNER.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45. (1) Counting as three term hours.*

PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45. (2) Counting as three term hours.*

PROFESSOR DURKEE.

4. Qualitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

5. Qualitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon. Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

[6. Mineralogy 1 is equivalent to Chemistry 6.]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00. (2) Counting as two term hours.*

DR. KOLB.

8. Metallurgy. Lectures and recitations. Chemistry 8 is open to students who have taken Chemistry 1. *Wed. Fri., 10.45. (2)*

PROFESSOR DURKEE.

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour. (1)* PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45. (1) Counting as three term hours.* DR. GARNER.

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45. (2) Counting as two term hours.* DR. GARNER.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Tu., Th., Sat., 11.45. (1) Counting as three term hours.* PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. *(2) and (1) Counting as six term hours.* PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors. Counting as two term hours.*

PROFESSOR MICHAEL AND DR. KOLB.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.*

PROFESSOR MICHAEL AND DR. KOLB.

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.* PROFESSOR MICHAEL.

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR MICHAEL.

BIOLOGY

PROFESSOR KINGSLEY AND DR. LAMBERT

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes,

reagents, as well as abundant material for illustration and dissection. There is also a department library containing about 1,600 volumes and over 4,500 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th. : lecture, 11.45 ; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 1 is required of all who elect work in this department, and is a pre-requisite for the other biological courses.

[2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri. : lecture, 4.00 ; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.]

3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri. : lecture, 4.00 ; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45 ; laboratory, Tu., Th., 2.00 to 4.00. (2) Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45 ; laboratory, Mon., Fri., 2.00 to 4.00. (1) Counting as three term hours.*

PROFESSOR KINGSLEY.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri. : lecture, 11.45 ; laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*

DR. LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. The expense of these excursions will be within two dollars for each student.

SUBJECTS

1. Physiography. Lectures and recitations, field work, written reports. *Tu., Th., 2.00; occasionally Sat. afternoon.* (2) *Counting as three term hours.* MR. RICHARDS.

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45.* *Counting as six term hours.* MR. RICHARDS.

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours.* PROFESSOR KINGSLEY AND MR. RICHARDS.

4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year.* *Counting as three term hours.* MR. RICHARDS.

MINERALOGY

1. Determinative Mineralogy. Laboratory work, six hours a week; open to students who have taken Chemistry 1, 2, and 3. *Tu., Th., Sat., 10.45 to 12.45. (1) Counting as three term hours.* MR. RICHARDS.

2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45 to 12.45. (2) Counting as three term hours.* MR. RICHARDS.

DRAWING AND SHOPWORK

PROFESSOR ANTHONY

Drawing

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course

in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

SUBJECTS

[For hours, see the Engineering program.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week (second half-year).*

PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour† a week (second half-year).*

PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours* a week for the year.*

PROFESSOR ANTHONY AND MR. ASHLEY.

4. Kinematics. *Three hours a week (first half-year).*

PROFESSOR ANTHONY.

5. Machine Drawing (elementary). *Two hours† a week (second half-year).*

PROFESSOR ANTHONY.

6. Machine Drawing (advanced). *Two hours* a week (first half-year).*

ASSISTANT PROFESSOR C. H. CHASE.

7. Elements of Design. *One hour* a week (second half-year).*

PROFESSOR ANTHONY.

8. Machine Design (advanced). *Two hours* a week (first half-year).*

PROFESSOR ANTHONY.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

SUBJECTS

[For hours, see the Engineering program.]

1. Carpentry, Turning, and Moulding. *Two hours* a week (first half-year).* MR. STEWART.
2. Pattern-making. *One hour* a week (second half-year).* MR. STEWART.
3. Forging. *One hour* a week (second half-year).* MR. STEWART.
4. Vise and Machine Tools. *Two hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.
5. Project Work. *Three hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

CIVIL AND MECHANICAL ENGINEERING

PROFESSORS BRAY AND SANBORN

There are offered in the department of Civil and Mechanical Engineering such selected subjects from the engineering courses as may be profitably pursued by students in the courses in Liberal Arts who have taken the necessary preliminary work in mathematics, and who may desire to shape their work with reference to pursuing study in engineering after graduation. Such students will also find subjects adapted to their plans in the departments of Mathematics, Physics, Chemistry, and Drawing. Fuller details of the work in engineering will be found in the statement of the engineering courses. For all the subjects given below, algebra, geometry, and trigonometry are an indispensable preparation.

In the statement below, each "hour" is the equivalent of one term hour of credit.

SUBJECTS

[For hours, see the Engineering program.]

1. Surveying. General field practice, computations, and plotting. *Two hours* a week (first half-year); two hours* a week (second half-year).* PROFESSOR SANBORN AND MR. ROCKWELL.
2. Topography and Advanced Surveying. Lectures, recitations, drawing, and field practice. *Two hours* a week.* PROFESSOR SANBORN.
3. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours* a week (first half-year).* PROFESSOR BRAY.

* See foot-note, page 88.

4. Railroads. Economic Locations (to be taken with Engineering 3).
Three hours a week. PROFESSOR BRAY.

5. Hydraulics. *Three hours a week (second half-year).*
PROFESSOR SANBORN.

6. Pure Mechanics. *Three hours a week (first half-year).*
PROFESSOR SANBORN.

7. Applied Mechanics. *Three hours a week (second half-year).*
PROFESSOR BRAY.

8. Experimental Mechanics (laboratory). *One hour* a week (first half-year).*
PROFESSOR SANBORN.

9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*
ASSISTANT PROFESSOR C. H. CHASE.

10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).*
PROFESSOR BRAY.

11. Highways. *Two hours a week (second half-year).*
PROFESSOR SANBORN.

[12. Masonry Construction. *Three hours a week (second half-year).*
PROFESSOR BRAY.]

[13. Sanitary Engineering. *Three hours a week (second half-year).*
PROFESSOR SANBORN.]

14. Roofs and Bridges. *Three hours a week (first half-year).*
PROFESSOR BRAY.

15. Structural Design. *Two hours a week.* MR. ROCKWELL.

ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Liberal Arts who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 4 and 5 require a like acquaintance with calculus and differential equations.

SUBJECTS

[For hours, see the Engineering program.]

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).* PROFESSOR HOOPER.

* See foot-note, page 88.

2. Electrical Problems. *Two hours a week (second half-year).*
MR. ROLLINS.
3. Electrical Laboratory (advanced course). *Three hours a week for the year.*
PROFESSOR HOOPER.
4. Electricity: Alternating Currents. *Three hours a week for the year.*
PROFESSOR HOOPER.
5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).*
PROFESSOR HOOPER.
6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).*
PROFESSOR HOOPER.
7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).*
PROFESSOR HOOPER.
8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).*
PROFESSOR HOOPER.

MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS

- [1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., 4.00.* PROFESSOR LEWIS.]

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2. Music 1 will be given in 1903-1904.

2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading concerning the lives of Bach, Mozart, and Beethoven. *Tu., 3.00-4.00; Th., 3.00-5.00.* PROFESSOR LEWIS.

An elementary knowledge of piano playing is required.

- [3. Sight-reading in Song, and Harmonic Analysis. *Th., 4.00.* PROFESSOR LEWIS.]

Music 3 will be given in 1903-1904.

Only those who have finished Music 2 may take Music 3. Work of the prominent composers of choral works in the eighteenth and nineteenth centuries will furnish the material for study in sight-reading. The harmonic analysis begun in Music 2 will be continued, with special attention to the more difficult problems of modern music.

4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Jadassohn, Bridge, and others; collateral reading concerning the lives of Schubert, Schumann, Mendelssohn, and Wagner. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.]

Students who elect Music 5 must have attained Grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

[6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR LEWIS.]

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read with facility German and French, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00.* (2) PROFESSOR DOLBEAR.]

The first half-year's work in Physics 1 must have been done by those who elect Music 8. Music 8 will not be given until 1904-1905.

THE FINE ARTS**ASSISTANT PROFESSOR WHITTEMORE**

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9-45.*

ASSISTANT PROFESSOR WHITTEMORE.

[2. The Fine Arts of the Middle Ages and the Renaissance. *Mon., Wed., Fri., 9-45.*

ASSISTANT PROFESSOR WHITTEMORE.]

PHYSICAL TRAINING**DR. STROUD AND MISS CARVILL**

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumbbells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

The prefixed w signifies whole year; F, first half-year; S, second half-year

M Tu W Th F S indicate days for two-period and one-period subjects

MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
CAPEN				
SCHNEIDER				
BOLLES	wHst 2		wHst 3	
BROWN		sMth 8		sMth 6, F7
SHIPMAN				
DOLBEAR			wPhs 1	
FAY	wGer 6		wGer 5	
KINGSLEY				FBio 5 M lect
MICHAEL				
CUSHMAN		FPhil 8, S11,12,13	wPhil 6, 7	
MAULSBY	FEng 17	wEng 25, 26	wEng 19, 20	
LEWIS	wFrm 2	wFrm 1		sMus 6
DURKER			sChm 8 WF	
DENISON				wLat 3, 4
H. G. CHASE		wPhs 5 F FPhs 5 W lect	wPhs 5 F	sPhs 2, F4
WADR		wGrk 1		
METCALF	FEcS 180	FEcS 2, S3		
WHITTEMORE	sEng 18	wFnA 1, 2		sEng 9, W15
LAMBERT		wBio 7 WF	wBio 7 WF	wBio 7 WF lect
COLWELL	wGer 2	wGer 1		
EVANS	FPbL 4, 6, S5, 7		wHst 1	FPbL 1, S2
GARNER		FChm 10		sChm 11 MW
RANSOM				
KOLB				
RICHARDS			wGeo 2	wGeo 2
MEMBERS OF OTHER FACULTIES		wHeb 1		wPhil 14

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

Subjects in Roman type occupy three periods

Subjects in *Italic* type occupy two periods ; in **Boldface** type, one period

MONDAY, WEDNESDAY, FRIDAY

	2.00	3.00	4.00	5.00
CAPEN				Hours in this column are subject to re-assignment during the opening week
SCHNEIDER				
BOLLES				
BROWN				
SHIPMAN				Assignments for 1902-3 will be found under the statements of the respective departments
DOLBEAR			sMus 8 M	
FAY	wFrm 4			
KINGSLEY	wBio 2, 3 MF rBio 5, 5b MF	wBio 2, 3 MF rBio 5, 5b MF	wBio 2, 3 MF lec sScGer W	
MICHAEL				Chm 12, 13, 14 15, 16, 17
CUSHMAN				
MAULSBY	wEng 11 MF wEng 12			
LEWIS		wFrm 5		wMus 7
DURKER	wChm 4, 5 MF wChm 1 WF lect rChm 9 M	wChm 4, 5 MF rChm 9 M	wChm 4, 5 MF rChm 9 M	sChm 65
DENISON		wLat 2	rClA 1, Lat 9, SIG r or s Lat 8, 11, 12	
H. G. CHASE				
WADE	wGrk 2		sClA 2	
METCALF			sEcS 6	wEcS 7
WHITTEMORE				rEng 23
LAMBERT	wBio 7 WF	wBio 7 WF		
COLWELL				wGer 4
EVANS		rHst 4, 6, 55, 7		wHst 12
GARNER	wChm 1 M	wChm 1 M	wChm 1 M	
RANSOM		rMth 9 sMth 14 W		
KOLB				
RICHARDS	rGeo 130 W	rGeo 130 W	rGeo 130 W	rGeo 130 W
MEMBERS OF OTHER FACULTIES			wHst 11 a	Mth 10, 11, 12, 13

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

The prefixed w signifies whole year; F, first half-year; S, second half-year

M Tu W Th F S indicate days for two-period and one-period subjects

TUESDAY, THURSDAY, SATURDAY

	8.45	9.45	10.45	11.45
CAPEN		F Pbl. 3		
SCHNEIDER	wGrk 4	wGrk 5		
BOLLERS				
BROWN		F Mth 3, S5		S Mth 2
SHIPMAN			F Phil 3, S4	S Eng 24
DOLBEAR		S Phys 8 Tu Th		
FAY	wGer 3		w Ital 1 w Frn 6	•
KINGSLEY	F or SBio 4 lect			F Bio 1 TuTh lect
MICHAEL				
CUSHMAN		F Phil 1, 2, S5		S Ped 1
MAVISBY	S Eng 14		F Eng 1, S7	
LEWIS	w Frn 3			w Mus 4, 5
DURKEE	wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu wChm 4, 5 S FChm 2, S3 S	wChm 1 Tu
DENISON	wLat 1a	wLat 1b		
H. G. CHASE		F Phys 5 Tu Th	wPhys 5 Tu Th	wPhys 5 Tu Th
WADE		wGrk 1		wGrk 3
METCALF	F EcS 4, S5		w EcS 4	
WHITTEMORE	F Eng 13		F Eng 10, S2	
LAMBERT				S Bio 1 TuTh lect
COLWELL				
EVANS				
GARNER		wChm 1 Tu	wChm 1 Tu	wChm 1 Tu
RANSOM	wMth 1a	wMth 1b		F Mth 4
KOLB				
RICHARDS		F Geo 130 S	F Min 1, S2	F Min 1, S2
MEMBERS OF OTHER FACULTIES	F Hst 10	wHst 11	S Phil 9	w Eng 27 w Phil 10* F Hst 11 b*

* These hours are for 1903-4.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* during 1902-1903 are bracketed, pages 57-93

Subjects in Roman type occupy three periods

Subjects in *Italic* type occupy two periods ; in **Boldface** type, one period

TUESDAY, THURSDAY

	2.00	3.00	4.00	5.00
CAPEN				Hours in this column are subject to re-assignment during the opening week
SCHNEIDER				
BOLLES		<i>rHst 8, s9</i>		
BROWN				Assignments for 1902-3 will be found under the statements of the respective departments
SHIPMAN		<i>rEng 3 Tu, 5 Th</i> <i>sEng 4 Tu, 6 Th</i>		
DOLBEAR		<i>rAst 1</i>	<i>rPhs 6, s7</i>	
FAY				
KINGSLEY	<i>rBio 1</i> <i>r or sBio 4</i>	<i>rBio 1</i> <i>r or sBio 4</i>		<i>wBio 8</i> <i>rGeo 3</i>
MICHAEL				
CUSHMAN				
MAULSBY	<i>sOra 7</i>			<i>rEng 8</i>
LEWIS		<i>wMus 2</i>	<i>wMus 1 Tu, 3 Th</i> <i>wMus 2 Th</i>	
DURKEE	<i>rChm 2, s3</i>	<i>rChm 2, s3</i>	<i>rChm 2, s3</i>	
DENISON	<i>wLat 5 Tu</i> <i>wLat 6 Th</i>			<i>wLat 7</i>
H. G. CHASE	<i>sPhs 3</i>	<i>sPhs 3</i>	<i>sPhs 3</i>	
WADE			<i>wGrk 6 Tu</i> <i>wGrk 7 Th</i>	<i>wGrk 8, 9, 10</i>
METCALF				
WHITTEMORE	<i>wOra 1 Th</i>			<i>wOra 2, 4, 6, 8</i>
LAMBERT	<i>wBio 1 Tu Th</i>	<i>wBio 1 Tu Th</i>		
COLWELL				<i>wGer 3b</i>
EVANS				
GARNER				
RANSOM				
KOLB	<i>sChm 7</i>	<i>sChm 7</i>	<i>sChm 7</i>	
RICHARDS	<i>sGeo 1</i> <i>Occasionally also</i>	<i>Saturdays</i>		<i>rGeo 3</i> <i>Irreg rs Geo 4</i>
MEMBERS OF OTHER FACULTIES				<i>wHeb 2</i>

Courses in Science

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 58.

English 2. A Study of Expression. (*Second half-year.*) See page 58.

German 1. Elementary German. See page 62.

Or **German 2.** Intermediate German. See page 62.

French 1. Elementary French. See page 64.

Or **French 2.** Intermediate French. See page 64.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

Physics 1. General Physics. See page 80.

Chemistry 1. General Chemistry. See page 83.

Biology 1. General Biology. See page 85.

Physical Training.

Sophomore Year

German 2. As above.

Or German 3. For the rapid reading of modern prose. (*First half-year.*) See page 63.

And Biological German. Reading of some important biological work. *Two hours a week. (Second half-year.)*

French 2. (For those entering with German.)

Biology 2 or 3. General Biology. See page 85.

Mathematics 1. Algebra, Geometry, Trigonometry. See page 78.

Chemistry 2. Qualitative Analysis. See page 83.

Chemistry 3. Qualitative Analysis. See page 83.

Physical Training.

Junior Year

German 3 and Biological German (for those entering with French), as above.

Physics 3.. Physical Laboratory. See page 80.

Chemistry 10. Organic Chemistry. See page 84.

Biology 2 or 3. See page 85.

Biology 4. Elementary Physiology. See page 85.

Biology 5. Histology. See page 85.

Senior Year

Geology 1. Physiography. See page 86.

Philosophy 1 or 2. Introductory subject. (*First half-year.*) See Page 70.

Philosophy 5. Psychology. (*Second half-year.*) See page 71.

Biology 7. Botany. See page 85.

Mineralogy 1. Determinative Mineralogy. See page 87.

Geology 2. Geology. See page 86.

Special work (six term hours) in Biology, Geology, Chemistry, or Electricity.

COURSE IN BIOLOGY

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in General Science, except Mathematics.

Junior Year

German 3B. (*First half-year.*) **Biological German.** (*Second half-year, for those entering with French.*) **Biology 2** or 3, and 4, and 5, and Geology, as in the Senior year of the course in General Science.

Philosophy 1 (or 2) and 5, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. See page 84.

Senior Year

Mineralogy 1 and **Geology 2**, as in the Senior year of the course in General Science.

Biology 7. Botany. See page 85.

Biology 8. **Special Research in Biology**, including dissertation. *Twelve hours.*

MEDICAL PREPARATORY COURSE

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in Biology.

Junior Year

As in the Junior year of the course in Biology.

Senior Year

Philosophy 3. Logic, especially Deductive. See page 71.

Philosophy 9. Ethics, the Theory of Morals. See page 72.

Human Anatomy and Physiology. (At Tufts Medical School.)

Medical Chemistry. (At Tufts Medical School.)

COURSE IN CHEMISTRY

PROFESSOR DURKEE

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*)
See page 58.

English 2. A Study of Expression. (*Second half-year.*) See page 58.

German 1. Elementary German. See page 62.

Or German 2. Intermediate German. See page 62.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1. Algebra, Solid Geometry, and Trigonometry. See page 78.

Physics 1. General Physics. See page 80.

Chemistry 1. General Chemistry. See page 83.

Mechanical Drawing. *Two hours a week (first half-year).* See page 88.

Elective. *Three hours a week (second half-year).*

Physical Training.

Sophomore Year

German 2. As above.

Or French 1. Elementary French. See page 64.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 4. Physical Laboratory. See page 80.

Chemistry 2. Basic Qualitative Analysis. See page 83.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 83.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 83.

Chemistry 10. Organic Chemistry. See page 84.

Chemistry 11. Theoretical Chemistry. See page 84.

Physical Training.

Junior Year

Chemistry 5. Quantitative Analysis (advanced). See page 83.

Mineralogy 1. See page 87.

Chemistry 8. Metallurgy. See page 83.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced). See page 84.

Chemistry 13. Organic Chemistry (advanced). See page 84.

Chemistry 14. Laboratory work in Inorganic Preparations. See page 84.

Chemistry 15. Laboratory work in Organic Analysis. See page 84.

Biology 1. General Biology. See page 85.

Economics and Sociology 1. Elements of Political Economy, and Practical Problems. See page 77.

Senior Year

Biology 4. Elementary Physiology. See page 85.

Chemistry 7. Fire Assay. See page 83.

Chemistry 9. Gas Analysis. See page 84.

Chemistry 13. Organic Chemistry (advanced). See page 84.

Elective. *Six hours a week.*

Research and Thesis. *Four hour a week (first half-year) ; ten hours a week (second half-year).*

Department of Engineering

ADMINISTRATIVE BOARD

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INSTRUCTORS

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Professor of Mechanical Engineering.

AMOS E. DOLBEAR, M.E., Ph.D., LL.D. . . . 134 Professors Row
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WILLIAM L. HOOPER, A.M., Ph.D. 124 Professors Row
Professor of Electrical Engineering.

GARDNER C. ANTHONY, A.M. 14 Professors Row
Professor of Technical Drawing and Dean of the Department of Engineering.

FRANK W. DURKEE, A.M. 38 Professors Row
Professor of Inorganic Chemistry.

FRANK B. SANBORN, C.E., M.S. . 10 Buena Vista Park, Cambridge
Professor of Civil Engineering.

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Professor of Political Science.

FRANK G. WREN, A.M. 16 Professors Row
Professor of Mathematics.

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- HARRY GRAY CHASE, B.S. 2 Curtis Avenue
Assistant Professor of Physics.
- SAMUEL C. EARLE, A.M. 9 Electric Avenue
Assistant Professor of English.
- THOMAS WHITTEMORE, A.B. . 372 Massachusetts Ave., Cambridge
Assistant Professor of English.
- CHARLES C. STROUD, A.B., M.D. 72 Curtis St.
Instructor in Physical Training.
- WIGHTMAN W. GARNER, A.B., PH.D. 20 West Hall
Instructor in Chemistry.
- EDWARD H. ROCKWELL, S.B. 3 Haskell Street, Allston
Instructor in Civil Engineering.
- EDWIN B. ROLLINS, B.S. 1 West Hall
Instructor in Electrical Engineering.
- GEORGE F. ASHLEY 11 Laurel St., Somerville
Instructor in Drawing.
- LESLIE C. WELLS, A.M. 6 Dean Hall
Instructor in French.
- CHARLES E. STEWART, S.B. 36 Packard Avenue
Instructor in Shopwork.

Courses of Instruction

Four courses are provided in Engineering, each requiring four years of study and leading to the degree of Bachelor of Science.

The courses are in Civil Engineering, Mechanical Engineering, Electrical Engineering, and Chemical Engineering.

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects for instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 109, Mechanical Engineering, page 111, Electrical Engineering, page 113, Chemical Engineering, page 115.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 116 to 136.

FRESHMAN YEAR

[Alike for all courses.]

FIRST TERM		SECOND TERM	
	No.		No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Freehand Drawing	22	Technical Sketching	23
Carpentry, Turning, and Foundry	40	Pattern Making	42
Physics	70	Physics	70
English	140	English	141
French or	161	French or	161
German	166	German	166
Physical Training	185	Physical Training	185

CIVIL ENGINEERING

The studies which underlie general engineering and science—mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in advanced surveying, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 107.

SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English	142	Surveying	91
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Machine Drawing (<i>elective</i>)	26

JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	8	Topography	92
Qualitative Analysis	52	Masonry or Sanitary Engineering	111
Topography	92	Applied Mechanics	113
Pure Mechanics	112	Experimental Mechanics	116
Experimental Mechanics	115	Structural Design	117
Steam Engine	120	<i>* Three of the following electives:</i>	
<i>* Two of the following electives:</i>		Differential Equations	9
Machine Drawing (advanced)	27	Least Squares	11
Machine Shop	45	Machine Drawing	26
† Electrical Laboratory	73	Machine Design	28
Electricity and Magnetism	74	Qualitative Analysis	53
Geology	130	† Electrical Laboratory	73
English		‡ Dynamo-Electric Machinery	77
Modern Languages		Steam Engineering	121
		English	
		Modern Languages	

SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Railroad Surveying	94	Highways	93
Railroad Engineering	95	Hydraulics	110
Roofs and Bridges	97	Sanitary Engineering or Masonry	109
Political Economy	180	Thesis	135
<i>* Three of the following electives:</i>		<i>* Three of the following electives:</i>	
Mathematics		Mathematics	61
Machine Shop	45	Quantitative Analysis	65
Mineralogy	59	Applied Chemistry	67
Quantitative Analysis	61	Assaying	87
Gas Analysis	63	§ Telegraph and Telephone	96
Electricity	82	Railroads—Economic Locations	98
Applied Mechanics	114	Bridge Design	121
Structural Design	118	Steam Engineering	
Geology	130	English	
English		Modern Languages	
Modern Languages			

* Electives must be approved by the Department. † No. 73 must be taken for entire year.
 ‡ Either 73 or 74 is required before taking 77. § Omitted in 1902-1903.

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through four terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and of boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

MECHANICAL ENGINEERING

FRESHMAN YEAR — alike for all courses. See page 107.

SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (<i>elective</i>)	91

JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Machine Shop	45
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	Experimental Mechanics	116
Steam Engine	120	Steam Engineering	121
<i>* One of the following electives:</i>		<i>* One of the following electives:</i>	
Electricity and Magnetism	74	Qualitative Analysis	53
Topography	92	Metallurgy	57
English		Dynamo-Electric Machinery	77
Modern Languages		Sanitary Engineering	109
		† Masonry	111
		English	
		Modern Languages	

SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Design	29	Engineering Laboratory	123
Applied Mechanics	114	Hydraulics	110
Steam Engineering	122	Thesis	135
Political Economy	180	<i>* Two of the following electives:</i>	
<i>* Two of the following electives:</i>		Mathematics	
Mathematics		Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Gas Analysis	63	Electricity	83
Electricity	82	† Telegraph and Telephone	87
Roofs and Bridges	97	Sanitary Engineering	109
Structural Design	117	† Masonry	111
		Structural Design	117
		Bridge Design	98

* Electives must be approved by the Department.

† Omitted in 1902—1903.

ELECTRICAL ENGINEERING

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING

FRESHMAN YEAR — alike for all courses. See page 107.

SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (<i>elective</i>)	91

JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	8	Differential Equations	9
Qualitative Analysis	52	Machine Design	28
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Electricity	76
Experimental Mechanics	115	Dynamo-Electric Machinery	77
Steam Engine	120	Applied Mechanics	113
* <i>Two of the following electives:</i>		Experimental Mechanics	116
Machine Drawing	27	* <i>One of the following electives:</i>	
Electricity and Magnetism	74	Mathematics	
Topography	92	Machine Shop	45
English		Qualitative Analysis	53
Modern Languages		Metallurgy	57
		Topography	92
		Sanitary Engineering	109
		† Masonry	111
		English	
		Modern Language	

SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Electricity	82	Electricity	83
Electrical Laboratory	79	Electrical Laboratory	79
Dynamo Design	88	† Telegraph and Telephone	87
Political Economy	180	Hydraulics	110
* <i>Two of the following electives:</i>		Thesis	135
Mathematics		* <i>Two of the following electives:</i>	
Machine Design	29	Mathematics	
Quantitative Analysis	61	Quantitative Analysis	61
Gas Analysis	63	Applied Chemistry	65
Mineralogy	59	Assaying	67
Mathematics of Alternating Currents	84	Electrical Topics	85
Railroad Engineering	95	Magnetism	86
Applied Mechanics	114	Highways	93
Roofs and Bridges	97	Railroads — Economic Locations	96
		Sanitary Engineering	109
		† Masonry	111

* Electives must be approved by the Department.

† Omitted in 1902—1903.

CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics and the less technical engineering subjects, have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemical and advanced mechanical engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 107.

SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185

JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	8	Differential Equations	9
Qualitative Analysis	52	Qualitative Equations	53
Organic Chemistry	55	Metallurgy	57
Electrical Laboratory	73	Electrical Laboratory	73
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	Experimental Mechanics	116
Steam Engine	120	* <i>Two of the following electives:</i>	
		Machine Shop	45
		Dynamo-Electric Machinery	77
		Sanitary Engineering	109
		†Masonry	111
		Structural Design	117

SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Drawing	27	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Quantitative Analysis	61	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Political Economy	110	Hydraulics	180
* <i>Three of the following electives:</i>		Thesis	135
Mathematics	82	* <i>One of the following electives:</i>	
Electricity	97	Mathematics	
Roofs and Bridges	114	Machine Design	28
Applied Mechanics	118	Sanitary Engineering	109
Structural Design		†Masonry	111
		Structural Design	117

* Electives must be approved by the Department.

† Omitted in 1902-1903.

Departments

MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are embodied in Osborne's Calculus supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Spherical Trigonometry (4) Theory of Least Squares (10) and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of Potential Functions (13) are offered as instruments for investigating the more complex physical phenomena.

MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra	1	1	4	1	Wren	C E M Ch
3	Plane Trigonometry	1	1	2	1	Wren	E E M Ch
4	Spherical Trigonometry	4	1	3	1	Ransom	Elective
5	Plane Analytic Geometry	1	2	3	1	Wren	C E M Ch
7	Differential and Integral Calculus	2	1, 2	3	1	Wren	C E M Ch
8	Advanced Differential and Integral Calculus	3	1	2	1	Rockwell	C E M Ch
9	Differential Equations	3	2	2	1	Wren	E M Ch
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	3 or 4	2	2	1	Wren	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for the machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

The classes in both Elementary (26) and Advanced (27) Machine Drawing are conducted according to the methods of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

DRAWING							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing	1	1, 2	{ 2 1 }	2 1/4 }	{ Anthony { Ashley }	C E M Ch
21	Descriptive Geometry	1	2	3	1	{ Anthony { Ashley }	C E M Ch
22	* Freehand Drawing	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching	1	2	1	2	{ Anthony { Ashley }	C E M Ch
25	Mechanism	2	1	{ 2 1 }	2 }	Anthony	C E M Ch
26	Elementary Machine Drawing	2	2	2	2	Anthony	E M Ch
27	Advanced Machine Drawing	3	1	2	3	C. H. Chase	M
28	Elementary Machine Design	3	2	3	3	Anthony	E, M
29	Advanced Machine Design	3	1	3	3	Anthony	M

* Not required of students entering College with this subject.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

A half-year is given to acquiring experience in the use of the ordinary tools in Carpentry (40) and the use of the tools and lathe in Wood Turning. Following this, moulding or foundry work is taken up in preparation for Pattern Making (42) which constitutes the remainder of the Freshman course. Forging (44) gives an introduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding. In the Junior year instruction in metal work is continued, with vise and Machine Tools (45).

Project Work (48), which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the subject in machine-shop instruction upon special lines.

SHOPWORK							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	{ Carpentry Wood Turning Foundry }	1	1	2	3	Stewart	C E M Ch
42	Pattern Making	1	2	1	3	Stewart	C E M Ch
44	Forging	2	2	1	3	Stewart	C E M
45	{ Chipping and Filing Machine Tools }	3	2	2	3	C. H. Chase	M
48	Project	4	2	3	3	C. H. Chase	Elective

* Carpentry, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks. † Civil Engineers may elect No. 45 in the first term.

CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations. It may cover the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57) is studied by lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. The lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	3	1, 2		{ Durkee } { Garner }	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Garner	Ch
57	Metallurgy (Chemistry 8)	3	2	2	1	50	Durkee	Ch
59	Mineralogy	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Analysis (Chemistry 5)	4	1, 2	2	3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9)	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry	4	2	2	1	55	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Lamb	Ch
69	Theoretical Chemistry (Chemistry 9)	4	2	2	1	50	Lamb	Ch

PHYSICS AND ELECTRICITY

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Work in the Physical Laboratory (72) comprises the more important quantitative determinants in mechanics, sound, light and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Elective work in elementary Electricity and Magnetism (74) is offered for those who may wish to supplement the lectures in general physics.

In Electrical Laboratory (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C E M Ch
72	Physical Laboratory	2	2	2	1	{ H. G. Chase } { Rollins }	C E M Ch
73	Electrical Laboratory	3	{ 1 } { 2 }	3 2	2 2	{ Hooper } { Chase } { Rollins }	E M Ch
74	Electricity and Magnetism	3	1	3	3	H. G. Chase	Elective
76	Electricity (Problems)	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	3	2	{ Hooper } { Rollins }	E

PHYSICS AND ELECTRICITY

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these arts and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This subject must be taken in connection with advanced machine design.

ENGINEERING—CIVIL AND MECHANICAL

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Topography (92) follows Surveying (90, 91) and comprises careful triangulation from stations near the college, accurate computations, location of contours, plotting and topographical drawing, determination of true north and south line, hydrographic surveying, measurement of flow of water and computation of horse-power available. Brief time also is given to mining surveying, plane table surveying, and determination of latitude, longitude, and time.

Highways (93) considers the location and construction of country roads and city streets; the physical properties of earth, broken stone, and various pavements used as road surface; economy of traction, grades, construction, and maintenance.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office-work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

ENGINEERING—CIVIL AND MECHANICAL							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying	2	1	2	3	{ Sanborn } { Rockwell }	C E M Ch
91	Surveying	2	2	2	2	{ Sanborn } { Rockwell }	C
92	Topography	3	1, 2	2	3	Sanborn	C
93	Highways	4	2	1	1	Sanborn	C
94	Railroad Surveying	4	1	2	3	Bray	C
95	Railroad Engineering	4	1	3	1	Bray	C
96	Railroads—Economic Locations	4	2	3	1	Bray	Elective

ENGINEERING—CIVIL AND MECHANICAL

Roofs and Bridges (97) is largely a study of various methods of computing stresses in common forms of trusses.

Bridge Design (98) is an elective class in design of framed structures of wood and steel.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water supply, disposal of sewage and garbage. Well-kept notes are required, and include reports of researches in engineering magazines and books, accounts of visits to laboratories, water works, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels. Tests are made in the new hydraulic laboratory.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, textbooks, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion, and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112. Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject open only to students who have passed satisfactorily in the required mechanics (112 and 113).

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
97	Roofs and Bridges	4	1	3	1	Bray	C
98	Bridge Design	4	2	2	3	Rockwell	Elective
109	* Sanitary Engineering	3, 4	2	3	1	Sanborn	C
110	Hydraulics	4	2	3	1	Sanborn	C E M Ch
111	* Masonry	3, 4	2	3	1	Bray	C
112	Pure Mechanics	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics	4	1	3	1	Bray	Elective

* Subjects 109 and 111 are given in alternate years. 109 will be given in 1902-1903, and 111 in 1903-1904.

ENGINEERING—CIVIL AND MECHANICAL

In Experimental Mechanics (115, 116) problems are set that require for analysis personal experimentation and correct application of the principles of pure and applied mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus.

Structural Design (117) is carried on in the lecture and drafting room, and is based upon the principles developed in previous engineering studies. The methods pursued are precisely those of a regularly organized engineer's office.

Structural Design (118) is an advanced subject in continuation of 117.

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers. Practice is also given in engine and boiler testing.

Geology (130) is a study, principally in the field, of rocks, minerals, earths, and foundations.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic that has interested the student is developed by extended personal research, design, or experimentation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics	3	1	1	3	Sanborn	C E M Ch
116	Experimental Mechanics	3	2	1	3	{ Bray { Sanborn }	M
117	Structural Design	3	2	2	3	Rockwell	C
118	Structural Design	4	1	2	3	Rockwell	Elective
120	Steam Engine	3	1	3	1	C. H. Chase	C E M Ch
121	Steam Engineering	3	2	3	1	Bray	M
122	Steam Engineering	4	1	3	1	{ Bray { C. H. Chase }	M
123	Engineering Laboratory	4	2	3	2	{ Bray { C. H. Chase }	M
130	Geology	3, 4	1	3	1, 2	Richards	Elective
135	Thesis	4	2	2	4		C E M Ch

ENGLISH

English is required throughout the Freshman and Sophomore years, the aim being to help the student to develop the power of thinking for himself; to learn to express his thoughts accurately, clearly, and interestingly; and to get some acquaintance with the best English literature, including the literature of science.

English 140 is a general introduction, English 141 a Study of Expression, English 142 a brief historical survey of English literature, and English 143 a study along special lines—description, narration, exposition, and argumentation, in technical and scientific writing.

Each subject will be presented by lectures and weekly or bi-weekly conferences, and in each subject the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, as far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

The following courses given in the College of Letters are approved electives for the Junior year.

English 5 (144) is Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week.

English 15 (146), Prose of the Nineteenth Century. Lectures, reading, brief critical essays.

English 18 (148), Shakespeare. Reading of selected plays, lectures, brief critical essays.

ENGLISH							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English	1	1	2	1	Earle	C E M Ch
141	English	1	2	3	1	Whittemore	C E M Ch
142	English	2	1	3	1	Earle	C E M Ch
143	English	2	1	2	1	Earle	C E M Ch
144	English 5 . . . . .	.	1	2	1	Shipman	Elective
146	English 15		2	2	1	Whittemore	Elective
148	English 18		2	3	1	Whittemore	Elective

MODERN LANGUAGES

An elementary knowledge of French or German, equivalent to subject 160 or 165, is required for admission to any course in Engineering.

The language offered in entrance will be continued during the first two years, unless the candidate for admission receives credit for the equivalent of Intermediate French (161) or Intermediate German (166), in which case he may take the alternative language for the two years.

Any subject in modern languages offered in the College of Letters may be elected by an Engineer, properly qualified, during his Junior or Senior year, subject to the approval of the instructors in the elected subject. Those who take German pursue the regular college course, but for those engineers who take French separate subjects are offered, especially adapted to their needs. Elementary French (160) is the equivalent of the work required for the entrance examination. Intermediate French (161) comprises a review of verbs and of syntactical difficulties, and the reading of a considerable amount of ordinary prose, with special attention paid to idiomatic translation. Advanced French (162) includes reading of difficult and technical prose, to enable the student to read rapidly and accurately, without translation, such French as he will find of practical value.

POLITICAL ECONOMY

Political Economy 180, designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.

MODERN LANGUAGES							
No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
160	French, Elementary		1, 2	4	1	Earle	
161	French, Intermediate	1	1, 2	3	1	Wells	C E M Ch
162	French, Advanced	2	1, 2	3	1	Wells	C E M Ch
165	German, Elementary		1, 2	3	1	Colwell	
166	German, Intermediate	1	1, 2	3	1	Colwell	C E M Ch
167	German, Advanced	2	1, 2	3	1	Fay	C E M Ch
OTHER SUBJECTS							
180	Political Economy	4	1	3	1	Metcalf	C E M Ch
185	Physical Training	1, 2	1, 2†	3	1	Stroud	C E M Ch

† From the middle of November to the middle of March.

The Graduate Department

ADMINISTRATIVE BOARD

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INSTRUCTION

Graduate instruction is given by the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

ENGLISH,	ECONOMICS AND SOCIOLOGY,
MODERN LANGUAGES,	MATHEMATICS,
LATIN,	CHEMISTRY,
GREEK,	BIOLOGY,
HISTORY AND PUBLIC LAW,	ELECTRICITY.

The Degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

THE DEGREE OF MASTER OF ARTS will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose

course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions :—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Executive Board of the Graduate Department. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Administrative Board of the Graduate Department before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Administrative Board of the Graduate Department.

The candidate for the degree of Doctor of Philosophy must make a written application to the Secretary of the Board at least one month before Commencement, when the thesis must be ready. For other conditions, applying to special departments, see pages 144, 145.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have taken, as major students in English, at least eighteen term hours, selected from the subjects provided. Subjects 7*, 17, 18, 19, 20, 23, 24, 25, and 26, so far as these have not been anticipated as undergraduate work, may be counted toward the master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire

* See "Departments of Instruction," pages 57 to 93.

work for the advanced degree may consist of a special course of study, undertaken under the direction of the department.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes.* To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 2 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

LATIN.—Candidates for the degree of Master of Arts in Latin must have completed satisfactorily Latin 1,* 2, 3 or 4, and 5, or equivalents. Greek may be taken as minor work with Latin. A reading knowledge of German is essential, and of French and Italian is desirable, for students intending to take advanced work in Latin. Graduate students, when pursuing subjects especially designed for undergraduates, are expected to do an extra amount of work in them. The required thesis must embody the result of the special investigation of some author or period, or of some philological or archaeological subject.

GREEK.—Candidates for the degree of Master of Arts in Greek must have completed Greek 1,* 2, 3, and 5, or equivalents for these subjects. Latin may be taken as minor work with Greek. Graduate students will be expected to do work of advanced character, whether in classes with undergraduates or on special lines of investigation assigned by the instructor. The required thesis, on some approved topic, relating to some

* See "Departments of Instruction," pages 57 to 93.

author, period, or philological problem, must give evidence of this advanced attainment. A reading knowledge of German and French is necessary for students intending to do advanced work in Greek.

HISTORY AND PUBLIC LAW.—Every graduate student who intends to become a candidate for a degree must have taken as undergraduate work History 1,* 2, and 3, and must be able to read French works. A working knowledge of German is desirable, and may in some cases be necessary. Of the subjects announced in the program of this department, the more advanced subjects will be accepted as part of the work leading to the degree of Master of Arts. In addition to these subjects, work will be laid out for graduate students along such special lines as individuals may desire to pursue. Certain collateral subjects may be called for in such cases. Graduate students will be expected to do something in the way of independent investigation of a definite subject, the results to be embodied in the thesis required to obtain the degree.

ECONOMICS AND SOCIOLOGY.—The candidates for the degree of Master of Arts in Economics and Sociology will be expected to have met, as an undergraduate, the requirements of a major student in that department. Candidates who are not graduates of Tufts College must satisfy the department that they are qualified by previous training to enter upon the desired course of study. Any subject but Economics 1 may be offered as graduate work, provided it has not been counted toward the first degree, but the work must be done with high credit. In addition to the regular work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates designing to pursue them. A reading knowledge of French and German is desirable. Emphasis is placed upon the requirement of a thesis and of an oral examination.

MATHEMATICS. — Graduate students in Mathematics must have passed creditably the prescribed undergraduate work in

* See "Departments of Instruction," pages 57 to 93.

this department,—Mathematics 1,*—and may do graduate work from that point or from such more advanced point as they may have attained. They are required to complete all the subjects offered by the department, from Mathematics 2 to Mathematics 10, to receive the degree of Master of Arts.

CHEMISTRY.—Candidates for the degree of Master of Arts must have completed subjects 1,* 2, 3, and 10, or their equivalents. Subjects 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, are offered for graduate students, and satisfactory work must be done in at least five of these subjects. The candidate must present an acceptable thesis and pass satisfactory examinations in all of the subjects studied.

BIOLOGY.—Candidates for the degree of Master of Arts in Biology must have already done work equivalent to Biology 2,* 3, and 4; or, lacking that, they must take omitted subjects in addition to their graduate work. The work will be done on the lines of comparative anatomy, histology, or embryology, and will include a thesis embodying original research.

ELECTRICITY.—The candidate for the master's degree in Electricity must have done substantially the work in that department required of the Bachelor of Electrical Engineering. This involves the election during his undergraduate course of studies in this department, if it is expected that the degree will be obtained within one year of graduate study.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

CHEMISTRY.—Candidates must be able to translate scientific German readily and accurately before beginning their work, and must have already taken subjects 1* to 7 inclusive, 9 and 10, or equivalent work. Unless previously qualified, they must take 11, 12, 13, 14, 15, and 17, and devote at least one year to subject 16. Examinations in the above subjects must be satisfactorily passed, and a thesis embodying an original investigation in Chemistry must be presented.

A well-equipped laboratory is open to graduate students who

* See "Departments of Instruction," pages 57 to 93.

may wish to pursue special lines of research, and the department is prepared to offer every facility for the encouragement of original investigations.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

HISTORY AND PUBLIC LAW.—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History 1, 2, and 3, and Public Law 1. For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details.

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late

Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of an ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, Civil Engineer, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.

METCALF HALL

Buildings and Equipment

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

LIBRARY

The library contains about forty-six thousand bound volumes and thirty-one thousand seven hundred pamphlets. The College regularly receives more than two hundred periodicals. By favor of Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five years, has been about twenty-three hundred volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the

collection of the Universalist Historical Society (fifty-four hundred volumes and several thousand pamphlets), to which, on application, students have free access ; in the Barnum Museum is the department library of Natural History, numbering about sixteen hundred volumes and forty-five hundred pamphlets ; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about fifty-five thousand bound volumes available for use.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance, and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facili-

ties, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well fitted for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing machines, a large wrestling mat, and facilities for basket ball. The gallery contains a running-track, one thirty-second of a mile in length. There is also a well lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, chronograph, and spectrometer from the Société Gènevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is provided, for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school. It is used also for the department of drawing and for the shop-work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are forge, moulding, pattern, and machine shops. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shops, and also serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

THE POWER STATION

This building is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. A twenty-five horse-power Sturtevant engine, directly coupled to a Mordey Alternator, furnishes power for driving the other generators. A ten horse-power Columbus gas-engine is used for lighting and power. A two-and-three-phase dynamo, and two 10-kilowatt direct current generators constitute the machines in use. There is a storage battery of sixty elements, which, together with the other apparatus used in this station, is designed for experimental purposes.

THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms

for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

General Information

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work, done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Eight numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Develop-

ment of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in *Sterna Wilsoni*," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,' " by D. L. Maulsby; "The Ossicula Auditus," by J. S. Kingsley; "The Development of the Eye Muscles in *Acanthias*," by Arthur B. Lamb; "The Cranial Nerves of *Amphiuma*," by J. S. Kingsley; and "The Systematic Position of the Cæcilians," by J. S. Kingsley. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by the Committee on Freshman Plans of Study, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made by classes as appears below, classification being based upon the official list last printed:—

Seniors and *all* Specials, 8.45 to 9.30 A.M.

Juniors, 9.30 to 10.15 A.M.

Sophomores, 10.15 to 11 A.M.

Freshmen, 11.00 A.M. to 12 M.

The Committee on Freshman Plans of Study will be in session for consultation from three to five, of the afternoon preceding registration day.

Arrangements for consultation may be made by individual students, toward the close of the first term.

Students will make their plans of study subject to the following regulations :—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required. The following program for registration is followed, classification being based upon the last official printed list :—

Seniors, 8.45 to 9.15 A.M.

Juniors, 9.15 to 9.45 A.M.

Sophomores, 9.45 to 10.15 A.M.

Freshmen, 10.15 to 10.45 A.M.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed for their respective classes, or who fail to file with the proper official their plans of study and other required data before one o'clock P.M. on the day of registration. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROMOTIONS

Students in the courses leading to the degrees of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

MAJOR SUBJECTS

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish

to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.
2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.
3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.
4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS

The college year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES

In case of absence, from any cause, involving more than three consecutive program appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students leaving College before the completion of any term are required to notify the Secretary of the Faculty at once. In case of failure to file such notification, tuition will be charged for the full term.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year. Non-resident women students in the College of Letters are subject to a fixed annual charge of ten dollars, in return for which a place for study is provided in Ballou Hall. Non-resident men students may have a study provided in one of the dormitories, on application to the Bursar.

Every student who enters the College of Letters is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after

Commencement, and is payable on the first day of the following college year; but the second bill of the senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in private families at \$3.50 to \$5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition	\$100.00	\$100.00
Physical Culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	25.00	91.00
Hospital	2.00	2.00
Board, \$3.50 to \$5.00 a week (36 weeks) . .	126.00	180.00
Total	\$264.00	\$384.00

For the expenses of the students of Engineering, see the special pamphlet issued by the Department of Engineering.

OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean may be found in his office during the forenoon, except for class engagements. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, I.L.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester I. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships of one hundred dollars each for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP.—Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

The following scholarships of fifty dollars each are awarded annually :—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

none will be received as candidates for the degree of B.D. after the opening of the Senior year.

Every student is expected to be present at the opening of the academic year.

Departments of Instruction

PSYCHOLOGY

PROFESSOR KNIGHT

The class is elementary. It is designed to present the fundamental principles of psychology. It aims especially to prepare the student for work in other departments of the School, and has constant reference to use in the professional life of the minister.

Three hours a week for the first half-year.

LOGIC

PROFESSOR TOUSEY

1. The First Year includes the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

2. Second-Year students are exercised more especially in the application of logical principles. A review of the fallacious tendencies of the mind is followed by an extended study of fallacies, as exemplified in classic examples and in current discussion. The work concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed; the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

1. Four hours a week for the second half-year.

2. Two hours a week for the first half-year.

ENGLISH

PROFESSOR MAULSBY AND ASSISTANT PROFESSOR WHITEMORE,
OF THE COLLEGE OF LETTERS

The efficiency of the clergyman is so largely conditioned by literary ability that much emphasis is placed upon the study of English. Opportunity is given to the student to elect in the College of Letters, in the direction both of composition and English literature. Well-directed practice in English composition affords direct aid in the formation of literary style, while the influence of the study of the masterpieces of literature, though indirect, is no less powerful in developing a feeling for appropriate language. Moreover, the great poets and prose writers abound in suggestion for the public speaker, in both their thought and its expression. In consequence, divinity students are expected to take such of the offered subjects as are adapted to their individual needs and available time. Some are advised to continue this work throughout their whole theological course.

OLD TESTAMENT

PROFESSOR WOODBRIDGE

In the absence of a specialist in this department, the aim is chiefly to secure a working knowledge of the Old Testament in English. Instruction is presented in five parts:—

1. History of the book: the English Bible and other versions; the manuscripts; the canon.
2. History of the people Israel, from the migration to the Christian era, derived from the original sources, with the aid of numerous secondary authorities.
3. History of the literature, origin of particular books and forms of literature, general introduction.
4. Critical and interpretative reading from the Pentateuch, the Prophets, the Law, the Psalms, and the Wisdom literature.
Three hours a week for two years.
5. The Hebrew Language. *Three hours a week for a year.*

NEW TESTAMENT

PROFESSOR HARMON

1(a). For the students of the First Year a special study is made of the preparation for Christianity in the thought and sentiment of the Jewish people, the character of their institutions, and their social and religious condition. A similar study is then made of the Graeco-Roman world.

1(b). A course in New Testament Greek is provided for beginners.

2. In the Second Year the sources of the text of the New Testament are considered, with the principles employed in determining the true text, the aim being to render the student intelligent as to the procedure in textual criticism and the bearing this procedure has on the work of exegesis. The history of the canon for the first two centuries, and the historical and literary criticism of the Gospels, are next treated, to secure on the part of the student an understanding of the principal problems involved and the grounds of their discussion, the habit of sober and sound criticism, and a knowledge of the nature and contents of the Gospel writings.

In dealing with the life of Jesus, notes on methods of correct interpretation are given the class, and their application is required in its exegetical work. The significant points and phases in the life and ministry of Jesus are selected and considered, passages from the Greek of the Synoptic Gospels being employed to obtain a knowledge of the mind of Jesus, his relations to the parties and people of his time, the methods he pursued in his ministry, the course of facts in his life, and the doctrines he taught. Incident to this study, the critical points in dispute are considered as they arise. Historical and archaeological questions are examined in their natural connections.

3. In the Third Year, the history and doctrines of the apostolic Church are studied, the book of Acts being used as the basis. This writing is first examined as an historical authority: passages from it in Greek are chosen, giving the significant stages in the external growth of the church and in its internal

development: and these are studied with the aim to trace the first realization of the life of Jesus in the world. The epistles of St. Paul are critically examined in the order of their origin in his ministry. Critical and exegetical studies of Hebrews and of the Johannine writings conclude the work.

As a part of this study, the theology of the New Testament is taken up. The attempt is made to discover the teaching of Jesus contained in the Synoptic Gospels. With this teaching as the basis, the individual interpretations of the several Synoptists, of the author of the Fourth Gospel, of St. Paul in his earlier and later epistles, of the author of Hebrews, and of the writers of the Catholic Epistles are compared, each writing being first considered by itself. The aim is to obtain the common elements of teaching, and also what is distinctive in each writer and time.

1(a). Three hours a week for a year.

1(b). Three hours a week for a year.

2. Three hours a week for a year.

3. Three hours a week for a year.

THE HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the Records of the Past, Müller's edition of the Sacred Books of the East, Müllers own writings, the series entitled Non-Christian Religious Systems; and in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Maspero, Jastrow, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the Encyclopaedia Britannica.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of ancient and modern India, China, Japan, and of Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

2. The history of Christianity: Church History.

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the Ante-Nicene Fathers, and others; the chief secondary authorities on general church history, such as the

works of Schaff, Fisher, Neander, Hase, Alzog; the special historical works of Fisher, Dorner, Ballou, Eddy; and the American Church History series.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

1. *Three hours a week for the first half-year.*

PROFESSOR KNIGHT.

2. *Four hours a week for a year.*

PROFESSORS WOODBRIDGE AND KNIGHT.

ETHICS

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

During the second half of the year, the class attends more especially to practical ethics, dealing with the leading problems of the individual and the social life, and giving particular attention to such subjects as rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction through-

out is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

Three hours a week for a year.

PHILOSOPHY OF THEISM

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the final problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

Three hours a week for a year.

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural

theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions,—the doctrine of God, the doctrine of man, the doctrine of salvation, and the doctrine of the future life. The traditional sub-divisions are noted historically, but are accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages:—

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.
2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.
3. The organization of the results into a scientific product.
4. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H. Martensen, J. S. Dodge, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

Four hours a week for the first half-year, and three for the second half-year.

ECONOMICS

PROFESSOR METCALF

Students who have not had this subject in College are expected to take at least the introductory portion, marked "Ele-

MINER HALL

The Divinity School

The Divinity School is one of the co-ordinate departments of Tufts College; and the general advantages of the College are enjoyed by its students. The College Library, the Museum of Natural History, the Gymnasium, are accessible to Divinity Students; and courses of study in the College of Letters are open to them, subject, however, to the discretion of the Faculty. The graduates of the Divinity School, in common with the graduates of the other departments, are eligible to membership in the Alumni Association of Tufts College.

CONDITIONS OF ADMISSION

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts (whose course of study has included Greek) are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. They enter the Second Year of the course summarized on pages 183, 184. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their College course differs from the A. B. course.

3. Persons who have not had college training must approve themselves to the Faculty, by examination or otherwise, as qualified to enter upon a four years' course of study which, in addition to the strictly theological subjects, includes psychology, logic, literature, and history. Students who take this course may, at any time, by vote of the Faculty, become candidates for the degree of B. D.

4. Students from other theological schools will be admitted *ad eundem* on presenting certificates of regular dismissal, but

none will be received as candidates for the degree of B.D. after the opening of the Senior year.

Every student is expected to be present at the opening of the academic year.

Departments of Instruction

PSYCHOLOGY

PROFESSOR KNIGHT

The class is elementary. It is designed to present the fundamental principles of psychology. It aims especially to prepare the student for work in other departments of the School, and has constant reference to use in the professional life of the minister.

Three hours a week for the first half-year.

LOGIC

PROFESSOR TOUSEY

1. The First Year includes the usual topics of an academic course. Considerable time is given to logical analysis and the employment of the inductive method as respects both discovery and proof.

2. Second-Year students are exercised more especially in the application of logical principles. A review of the fallacious tendencies of the mind is followed by an extended study of fallacies, as exemplified in classic examples and in current discussion. The work concludes with a brief study in the Ethics of Belief. Under this head the nature and conditions of belief are discussed, the general principles of evidence reviewed, and certain current misconceptions exposed; the aim being to enforce the duty of rationalizing our beliefs, and, while pointing out the limitations of the reason, to develop confidence in its actual findings, and a proper fortitude of conviction.

1. Four hours a week for the second half-year.

2. Two hours a week for the first half-year.

ENGLISH

PROFESSOR MAULSBY AND ASSISTANT PROFESSOR WHITTEMORE,
OF THE COLLEGE OF LETTERS

The efficiency of the clergyman is so largely conditioned by literary ability that much emphasis is placed upon the study of English. Opportunity is given to the student to elect in the College of Letters, in the direction both of composition and English literature. Well-directed practice in English composition affords direct aid in the formation of literary style, while the influence of the study of the masterpieces of literature, though indirect, is no less powerful in developing a feeling for appropriate language. Moreover, the great poets and prose writers abound in suggestion for the public speaker, in both their thought and its expression. In consequence, divinity students are expected to take such of the offered subjects as are adapted to their individual needs and available time. Some are advised to continue this work throughout their whole theological course.

OLD TESTAMENT

PROFESSOR WOODBRIDGE

In the absence of a specialist in this department, the aim is chiefly to secure a working knowledge of the Old Testament in English. Instruction is presented in five parts:—

1. History of the book: the English Bible and other versions; the manuscripts; the canon.
2. History of the people Israel, from the migration to the Christian era, derived from the original sources, with the aid of numerous secondary authorities.
3. History of the literature, origin of particular books and forms of literature, general introduction.
4. Critical and interpretative reading from the Pentateuch, the Prophets, the Law, the Psalms, and the Wisdom literature.
Three hours a week for two years.
5. The Hebrew Language. *Three hours a week for a year.*

NEW TESTAMENT

PROFESSOR HARMON

1(a). For the students of the First Year a special study is made of the preparation for Christianity in the thought and sentiment of the Jewish people, the character of their institutions, and their social and religious condition. A similar study is then made of the Graeco-Roman world.

1(b). A course in New Testament Greek is provided for beginners.

2. In the Second Year the sources of the text of the New Testament are considered, with the principles employed in determining the true text, the aim being to render the student intelligent as to the procedure in textual criticism and the bearing this procedure has on the work of exegesis. The history of the canon for the first two centuries, and the historical and literary criticism of the Gospels, are next treated, to secure on the part of the student an understanding of the principal problems involved and the grounds of their discussion, the habit of sober and sound criticism, and a knowledge of the nature and contents of the Gospel writings.

In dealing with the life of Jesus, notes on methods of correct interpretation are given the class, and their application is required in its exegetical work. The significant points and phases in the life and ministry of Jesus are selected and considered, passages from the Greek of the Synoptic Gospels being employed to obtain a knowledge of the mind of Jesus, his relations to the parties and people of his time, the methods he pursued in his ministry, the course of facts in his life, and the doctrines he taught. Incident to this study, the critical points in dispute are considered as they arise. Historical and archaeological questions are examined in their natural connections.

3. In the Third Year, the history and doctrines of the apostolic Church are studied, the book of Acts being used as the basis. This writing is first examined as an historical authority: passages from it in Greek are chosen, giving the significant stages in the external growth of the church and in its internal

development; and these are studied with the aim to trace the first realization of the life of Jesus in the world. The epistles of St. Paul are critically examined in the order of their origin in his ministry. Critical and exegetical studies of Hebrews and of the Johannine writings conclude the work.

As a part of this study, the theology of the New Testament is taken up. The attempt is made to discover the teaching of Jesus contained in the Synoptic Gospels. With this teaching as the basis, the individual interpretations of the several Synop-
tists, of the author of the Fourth Gospel, of St. Paul in his earlier and later epistles, of the author of Hebrews, and of the writers of the Catholic Epistles are compared, each writing being first considered by itself. The aim is to obtain the common elements of teaching, and also what is distinctive in each writer and time.

1(a). *Three hours a week for a year.*

1(b). *Three hours a week for a year.*

2. *Three hours a week for a year.*

3. *Three hours a week for a year.*

THE HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are the Records of the Past, Müller's edition of the Sacred Books of the East, Müllers own writings, the series entitled Non-Christian Religious Systems; and in addition, the works of Rawlinson, Wilkinson, Sayce, Johnson, Maspero, Jastrow, Barth, Legge, Oldenberg, Edkins, Haug, and others. Considerable use is also made of articles in the Encyclopaedia Britannica.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of ancient and modern India, China, Japan, and of Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

The main purposes of this study are further secured by frequent inductive reviews, oral and written.

2. The history of Christianity: Church History.

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society. They include Migne's edition of the Fathers; translations of the Ante-Nicene Fathers, and others; the chief secondary authorities on general church history, such as the

works of Schaff, Fisher, Neander, Hase, Alzog; the special historical works of Fisher, Dorner, Ballou, Eddy; and the American Church History series.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities; and, especially in the history of doctrines, they prepare several pieces of original work during the year.

1. *Three hours a week for the first half-year.*

PROFESSOR KNIGHT.

2. *Four hours a week for a year.*

PROFESSORS WOODBRIDGE AND KNIGHT.

ETHICS

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

During the second half of the year, the class attends more especially to practical ethics, dealing with the leading problems of the individual and the social life, and giving particular attention to such subjects as rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction through-

out is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

Three hours a week for a year.

PHILOSOPHY OF THEISM

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the final problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science: and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

Three hours a week for a year.

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural

theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The subject has four great divisions,—the doctrine of God, the doctrine of man, the doctrine of salvation, and the doctrine of the future life. The traditional sub-divisions are noted historically, but are accepted only so far as they seem to rest on essential principles or the real relations of truth.

The method includes several stages:—

1. The outline history of thought on the topic in hand, or the analysis and classification of opinions and theories according to their logical relations.

2. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

3. The organization of the results into a scientific product.

4. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

This method requires frequent reference to books used in the departments whose products are here co-ordinated, and to the theological works of A. H. Strong, Charles Hodge, James Martineau, Robert Flint, J. A. Dorner, H. Martensen, J. S. Dodge, and other representative teachers of all times and faiths.

The student is furnished with references to the various sources of material, he is instructed in the method of inquiry, and his results are criticised in the class-room. The occasional written examinations require original work, in part, and one original essay from each student is required within the year.

Four hours a week for the first half-year, and three for the second half-year.

ECONOMICS

PROFESSOR METCALF

Students who have not had this subject in College are expected to take at least the introductory portion, marked "Ele-

ments of Economics." (See page 77.) The aim is to acquaint the student with the principles of secular society, especially those illustrated in the production, exchange, and consumption of wealth.

Three hours a week for the first half-year.

APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the life of the world. The objective point is the efficiency of pastor and church in the function of social uplift. The course covers three half-years, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

Two hours a week for a year, and three for a half-year.

HOMILETICS AND PASTORAL CARE

PROFESSOR LEONARD

The course in Homiletics covers one-half of the Second Year and all of the Third and Fourth years, and includes the study of the most characteristic and instructive periods in the history of preaching; dictations and lectures on the idea and structure of the sermon; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts; the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, not less than six during the year, all of

which are criticised by the class and by the professor; studies during the Fourth Year on invention and arrangement of material, modes of development, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

The course in Pastoral Care considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications, spiritual, mental, social, of a good pastor; the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

Three hours a week for two-and-one-half years.

ORATORY

PROFESSOR MAULSBY

The object of the instruction in the department of Oratory is to inculcate a natural, impressive, and reverent manner of reading the Bible and the hymn-book, and also to cultivate in preaching a delivery that shall be forcible and sincere. To this end the work at first involves consideration of the fundamental principles that underlie all oratory, accompanied by practice to assimilate these principles. As it progresses, the work becomes specifically adapted to the needs of students of

divinity, and includes Scripture and hymn-reading, and practice in both written and unwritten discourse.

Two hours a week for the second half-year.

PHYSICAL TRAINING

DR. STROUD

Regular exercise in the Gymnasium is ordinarily required, three hours a week of men students, from November to April, during the first two years. The kind of exercise prescribed for each man depends upon his physical condition, as determined by careful medical examination. Provision is made for continuing physical exercise throughout the whole course, according to individual needs.

Course of Study *

FIRST YEAR

Psychology.—Elementary: the Relations between Mind and Body; the Principles of Psychology; Stout's Manual of Psychology as a text-book; References to Wundt and Sully and James. *Three hours a week, first half-year.* PROFESSOR KNIGHT.

Logic.—The First Principles of Logic; Concepts and Propositions; Immediate Reference; Deduction; Induction; Analogy; Hypothesis. *Four hours a week, second half-year.* PROFESSOR TOUSEY.

English.—One or more subjects, to be selected, under direction, from those offered in the College of Letters (see pages 58 to 60.) *Three hours a week.*

New Testament.—History of the Times of Jesus. *Two hours a week.* PROFESSOR HARMON.

Greek of the New Testament.—*Three hours a week.* PROFESSOR HARMON.

Oratory.—The Principles of Oratory Exemplified in Practice. *Two hours a week, second half-year.* PROFESSOR MAULSBY.

A Science or Language Study (to be selected under direction of the Faculty). *Three hours a week.*

SECOND YEAR

Logic.—Fallacies; Analysis of Arguments; Ethics of Belief. *Two hours a week, first half-year.* PROFESSOR TOUSEY.

Old Testament.—General Introduction. *Three hours a week.* PROFESSOR WOODBRIDGE.

New Testament.—Criticism of the Synoptic Gospels, Textual and Historical; Hermeneutics; Life and Teachings of Jesus from the Greek of the Synoptic Gospels, with studies from the life of his time. *Three hours a week.* PROFESSOR HARMON.

Church History.—History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Four hours a week.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

* Students holding the degree A.B. begin with the Second Year.

Homiletics.—History of Preaching; The Idea and Structure of the Sermon; Homiletic Analysis. *Three hours a week, second half-year.*

PROFESSOR LEONARD.

Oratory.—Practice in the reading of Scripture, Hymns, and in formal and extemporaneous speaking. *Two hours a week, second half-year.*

THIRD YEAR

Old Testament.—Special Studies in Old Testament Literature. *Three hours a week.*

PROFESSOR WOODBRIDGE.

New Testament.—Criticism of the Acts and the Epistles; History and Doctrines of the Apostolic Church, from the Greek of the Acts and the Epistles; Criticism, Exegesis, and Doctrines of the Johannine Writings. *Three hours a week.*

PROFESSOR HARMON.

Ethics.—The Moral Nature; Ethical Theory; Practical Ethics; Ethics and Theism. *Three hours a week.*

PROFESSOR TOUSEY.

Systematic Theology.—Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. *Four hours a week, first half-year; three hours a week, second half-year.*

PROFESSOR KNIGHT.

Homiletics.—Study of Sermons of Eminent Preachers; Lectures; Sermon Writing and Preaching. *Three hours a week.*

PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, second half year.*

PROFESSOR WOODBRIDGE.

FOURTH YEAR

The Non-Christian Religions.—Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Three hours a week, first half-year.*

PROFESSOR KNIGHT.

Philosophy of Theism.—The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Three hours a week.*

PROFESSOR TOUSEY.

Economics.—Elements of Economics. The general problems of the production, exchange, and consumption of wealth. Text-book: Bullock's Introduction to the Study of Economics; Lectures. *Three hours a week, first half-year.*

PROFESSOR METCALF.

Homiletics.—Homiletic Analysis; Lectures on Preaching; Composition and Delivery of Sermons. *Three hours a week.*

PROFESSOR LEONARD.

Applied Christianity.—The Relations of the Church to the Life of the Individual and to Social Problems. *Two hours a week, first half-year; and three hours a week, second half-year.* PROFESSOR WOODBRIDGE.

Pastoral Theology.—The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Three hours a week.*

PROFESSOR LEONARD.

General Information

RELIGIOUS EXERCISES

Devotional exercises, conducted by the professors and the students, are held daily in the chapel. Members of the upper classes prepare sermons, and preach them in turn before the class. An active branch of the Young People's Christian Union holds regular meetings for religious conference.

ELECTIVE STUDIES

Students are permitted to elect studies in other departments of the College, subject, however, to the discretion of the Faculty. Opportunities for pursuing advanced studies are offered to graduates and to others sufficiently qualified.

LIBRARIES AND LECTURES

Students have free access to the general library of the College and to the valuable library of the Universalist Historical Society. Important public libraries of Boston are open to students for consultation.

Supplementary lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of

the school to encourage the judicious use of these important instrumentalities of culture.

DEGREES

The degree of Bachelor of Divinity is granted to students already holding the degree A.B. who complete satisfactorily the regular course of three years, and to others who make equivalent attainments. No degree, however, is given for less than a year of resident work.

Some students, of exceptional ability and industry, while in the College of Letters, find time to elect work in the Divinity School, and thus are able to obtain the two degrees (A.B. and B.D.) in six years.

Those who seek no degree, but desire a partial or special course of one or two years, may arrange therefor with the Faculty.

THE DEGREE OF BACHELOR OF ARTS. Holders of the degree B.D. who may desire to obtain the degree A.B. are required to complete satisfactorily ninety-six term hours of work, under the following conditions:—

1. That the ninety-six term hours shall include all of the prescribed work necessary for the degree of Bachelor of Arts, as stated on pages 53 to 55.

2. If any of these prescribed hours have been taken while the candidate was in the Divinity School, and have been counted for the degree of Bachelor of Divinity, an equal number of free electives shall be substituted for them.

3. Any work satisfactorily done in the College of Letters while the candidate was in the Divinity School, which has not been counted towards the degree of Bachelor of Divinity, may be included in the ninety-six term hours required.

The degree of Master of Arts may be received by Bachelors of Arts who did not apply for the degree of B.D., after taking with credit an approved course of one year or more in this school, under conditions defined in the statement of the Graduate Department.

LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Third Year. Before that time the members of the Divinity School are not allowed to preach.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

EXPENSES

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it. A remission of two-fifths of this amount may be made by the Executive Committee of the Trustees to students who cannot be accommodated in Paige Hall, or who live at home. The necessary expenses for board, washing, gas, and gymnasium-charges do not exceed two hundred dollars a year.

BONDS AND DEPOSITS

Each student who enters the Divinity School is required to deposit with the Bursar of the College either a bond, with two satisfactory sureties, for the amount of one hundred dollars, or the sum of fifty dollars in money, which sum will bear interest at the rate of four per cent. yearly and will be returned to the student when he leaves the Divinity School, his term bills first having been paid in full.

PECUNIARY AID: SCHOLARSHIPS AND SPECIAL FUNDS

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School; and the Faculty is authorized to assign special scholarships to those whose circumstances require this extra help. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships of fifty dollars each are for the benefit of students in the Divinity School:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

THE MEDICAL SCHOOL

Medical Faculty*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . 8 Professors Row
PRESIDENT, and Professor of Moral Philosophy and Political Economy

HAROLD WILLIAMS, A.B., M.D. 528 Beacon St., Boston
DEAN and Professor of the Theory and Practice of Medicine

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
SECRETARY and Professor of General, Descriptive, and Applied Anatomy

HENRY WATSON DUDLEY, M.D. Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

JOHN LEWIS HILDRETH, A.B., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

HENRY JABEZ BARNES, M.D. 429 Beacon St., Boston
Professor of Hygiene

WALTER CHANNING, M.D., LL.D. Brookline
Professor of Mental Diseases

ERNEST WATSON CUSHING, A.B., M.D., LL.D.
168 Newbury St., Boston
Professor of Abdominal Surgery and Gynaecology

EDWARD OSGOOD OTIS, A.B., M.D. . . . 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

CHARLES ALFRED PITKIN, A.M., Ph.D. South Braintree
Professor of General Chemistry

MORTON PRINCE, A.B., M.D. 458 Beacon St., Boston
Professor of Diseases of the Nervous System

HENRY BECKLES CHANDLER, C.M., M.D. 34½ Beacon St., Boston
Professor of Ophthalmology

FREDERIC MELANCTHON BRIGGS, A.B., M.D.
Professor of Clinical Surgery 31 Massachusetts Ave., Boston

FREDERICK LAFAYETTE JACK, M.D. . . 215 Beacon St., Boston
Professor of Otology

FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington
Professor of Materia Medica and Therapeutics

* The names of the Faculty of Medicine are arranged in three groups: Professors, Assistant Professors, and other instructors. Within each group the order is that of academic seniority.

GEORGE ANDREW BATES, D.D.S. Auburndale
Professor of Histology

GEORGE HAMLIN WASHBURN, A.B., M.D.
Professor of Obstetrics 377 Marlborough St., Boston

ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road, Boston
Professor of Medical Chemistry and Toxicology

HORACE DAVID ARNOLD, A.B., M.D. . 188 Warren St., Roxbury
Professor of Clinical Medicine

TIMOTHY LEARY, M.D. 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of Theory and Practice of Medicine

JAMES SULLIVAN HOWE, M.D. 15 Charles St., Boston
Assistant Professor of Dermatology

HOWARD SUMNER DEARING, A.M. . . 607 Tremont St., Boston
Assistant Professor of Clinical Medicine

GEORGE WARTON KANAN, M.D. Hotel Oxford, Boston
Assistant professor of Clinical Gynaecology

WILLIAM ELISHA CHENERY, M.D. . 415 Columbus Ave., Boston
Assistant Professor of Laryngology

EDMUND CHANNING STOWELL, A.B., M.D.
9 Massachusetts Ave., Boston
Assistant Professor of Children's Diseases

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., Ph.D.
Assistant Professor of Physiology 150 St. Botolph St., Boston

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston
Assistant Professor of Ophthalmology

OTHER INSTRUCTORS

GARDNER WELD ALLEN, A.B., M.D.
Warren Chambers, 419 Boylston St., Boston
Instructor in Genito-Urinary Surgery

EDWARD LAMBERT TWOMBLY, A.B., M.D.
Instructor in Clinical Medicine 406 Massachusetts Ave., Boston

ARTHUR PATTERSON CHADBOURN, A.B., M.D.
Assistant in Clinical Medicine 225 Marlborough St., Boston

WILLIAM EASTMAN FAY, A.B., M.D.
Assistant in Clinical Medicine 366 Commonwealth Ave., Boston

CHARLES HENRY WINN, M.D. 1474 Tremont St., Boston
Assistant in Clinical Medicine

GEORGE ARTHUR WEBSTER, M.D. 419 Boylston St., Boston
Instructor in Otology

JOHN JENKS THOMAS, A.M., M.D. 88 Bay State Road, Boston
Instructor in Neurology

KARL AUGUST HOCH, M.D. McLean Hospital, Waverley
Instructor in Neuro-Pathology

JOSEPH CYRUS STEDMAN, M.D.
 Warren Chambers, 419 Boylston St., Boston
Instructor in Rectal Diseases

DANIEL HIRAM CRAIG, M.D. 158 Newbury St., Boston
Assistant in Clinical Gynaecology

EDWARD ALLEN PEASE, M.D. 483 Beacon St., Boston
Assistant in Clinical Gynaecology

RICHARD FITCH CHASE, M.D. 246 Huntington Ave., Boston
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

THEODORE CHARLES ERB, M.D. 159 St. Botolph St., Boston
Instructor in Obstetrics

ARTHUR WILLARD FAIRBANKS, M.D.
Assistant in Clinical Medicine 422 Massachusetts Ave., Boston

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
 Kilsyth Road, Brookline
Instructor in Theory and Practice of Medicine and Assistant in Pediatrics

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

ELMON ARTHUR BURNHAM, A.B., M.D.
Assistant in Clinical Medicine 144 Huntington Ave., Boston

ROBERT MICHAEL MERRICK, M.D. 15 Adams St., Dorchester
Assistant in Clinical Medicine

EDWARD ELIPHALET THORPE, M.D. 711 Boylston St., Boston
Instructor in Medical Chemistry

WARREN FISHER GAY, A.B., M.D. 416 Marlborough St., Boston
Instructor in Surgery and Assistant in Surgical Pathology

FREDERICK WARREN PEARL, A.B., M.D.
 Hotel Vendome, Commonwealth Ave., Boston
Assistant in Operative Surgery, and Assistant Demonstrator of Anatomy

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston
Instructor in Clinical Surgery

H. FOWLER RAINSFORD WATTS, M.D.
Assistant in Clinical Medicine 372 Dorchester Ave., Boston

HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury
Instructor in Obstetrics

CHARLES BALFOUR DARLING, A.B., M.D.
Assistant in Clinical Gynaecology 27 Rockville Park, Roxbury

JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass.
Assistant in Clinical Medicine

CHARLES FAIRBANK PAINTER, A.B., M.D.
Instructor in Orthopedic Surgery 86 Bay State Road, Boston

WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston
Assistant in Clinical Gynaecology

JOHN INNES FRENCH, M.D. 2A Park St., Boston
Instructor in Materia Medica and Therapeutics, and Assistant in Clinical Medicine

JOHN SHEPARD MAY, M.D. 219 Warren St., Roxbury
Instructor in Obstetrics, and Assistant in Clinical Medicine

RICHARD FROTHINGHAM O'NEIL, A.B., M.D.
416 Marlborough St., Boston
Demonstrator of Surgical Apparatus and Bandaging

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.
Assistant Demonstrator of Anatomy 84 Boylston St., Jamaica Plain

ELIZABETH ANGELA RILEY, M.D. 483 Beacon St., Boston
Instructor in Gynaecology and Abdominal Surgery

WILLIAM GRAY ADAMS, M.D. Hyde Park
Assistant in Anatomy

FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston
Instructor in Electro-Therapeutics and Haematology

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston
Instructor in Obstetrics

ELWOOD TRACY EASTON, M.D. 603 Tremont St., Boston
Instructor in Ophthalmology

THOMAS JAMES O'BRIEN, Ph.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Howard St., Brookline
Assistant in Clinical Medicine

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology Cushing Hospital, Roxbury

HENRY STANLEY WARREN, M.D. . . . 915 Boylston St., Boston
Assistant in Orthopedic Surgery

HARRY CALDWELL PARKER, M.D.
Instructor in Ophthalmology 382 Commonwealth Ave., Boston

ALONZO KINGMAN PAINE, M.D. . . . St. Elizabeth's Hospital
Prosector in Anatomy

WILLARD CHUTE PETERS, M.D. . . . Boston City Hospital
Assistant in Histology

Laboratory Assistants

L. MARY-BELLE HOLT, B.I. . . . Portland, Me
 HORACE G. WHEATON . . . Boston
Anatomy

WILLIAM L. RIPLEY . . . Newton
 FREEMAN A. TOWER . . . Boston
 MARGARET E. CARLEY . . . Winthrop
 WILLIAM D. WALKER . . . Somerville
 HARRY W. CLARK . . . N. Woburn
Physiology

THOMAS W. MURPHY . . . Lawrence
 WILLIAM A. DUTCHER . . . Boston
 LOUIS MODERNO . . . Cambridge
 C. A. SULLIVAN, . . . Everett
 ADELINE F. DUNHAM . . . Boston
General Chemistry

GEORGE W. DERRICK . . . Cambridgeport
 HORACE K. RICHARDSON, JR. . . . Medford
Histology

JOHN PARK . . . Lawrence
 WALTER W. KINGSBURY . . . Walpole
 LUTHER G. DEARBORN, JR., A.B. . . . Somerville
 W. H. NEWTON . . . Worcester
Medical Chemistry

JOHN J. GIBBONS . . . Clinton
Pharmacology

Bursar

HERBERT T. BROWN . . . Tufts College

STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.—The President, and Drs. Wheatley and Leary.

CATALOGUE.—Drs. Briggs and Bates.

NOMINATIONS.—Drs. Channing and Wheatley.

LIBRARY.—Drs. Channing, Otis, and Howe.

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Briggs, and Washburn.

ADMISSION.—Drs. Leary, Dearborn, and Bates.

DISPENSARY.—Drs. Briggs and Arnold.

The Dean and Secretary are members of all the above committees, *ex officio*.

Dispensary Staff

DEPARTMENT OF MEDICINE

Chief-of-Staff

HORACE D. ARNOLD, M.D., *Professor of Clinical Medicine*

Associate

HOWARD S. DEARING, M.D., *Assistant Professor of Clinical Medicine*

Physicians

HENRY EHRLICH, M.D. ANNIE S. K. PATCH, M.D.
HOWARD W. KNIGHT, M.D. MAX C. VON GROLL, M.D.
JOSEPH H. SAUNDERS, M.D. A. JANETTE WILSON, M.D.
HORATIO S. CARD, M.D.

DEPARTMENT OF SURGERY

Chief-of-Staff

FREDERIC M. BRIGGS, M.D., *Professor of Clinical Surgery*

Surgeons

FRANCIS D. DONOGHUE, M.D. FREDERICK W. PEARL, M.D.
WILLIAM A. ROLFE, M.D.

DEPARTMENT OF GYNAECOLOGY

Chief-of-Staff

ERNEST W. CUSHING, M.D., *Professor of Abdominal Surgery and
Gynaecology*

Associate

GEORGE W. KANAN, M.D., *Assistant Professor of Clinical Gynaecology*

Gynaecologists

EDWARD L. TWOMBLY, M.D. ELIZABETH A. RILEY, M.D.
CHARLES B. DARLING, M.D.

DEPARTMENT OF OPHTHALMOLOGY

Chief-of-Staff

HENRY B. CHANDLER, M.D., *Professor of Ophthalmology*

Associate

FRANK L. D. RUST, M.D., *Assistant Professor of Ophthalmology*

Ophthalmologists

EDWARD L. THORPE, M.D. ELWOOD T. EASTON, M.D.

DEPARTMENT OF LARYNGOLOGY

Chief-of-Staff

WILLIAM E. CHENERY, M.D., *Assistant Professor of Laryngology*

Laryngologists

FREDERIC D. LYON, M.D. PATRICK F. KELIHER, M.D.

The Medical School

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the school to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre and a half of floor space: is heated and ventilated throughout by both the direct and indirect systems, and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

, Departments of Instruction

ANATOMY

The course in anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their

importance in various operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the work required of the student during that period. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination will be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the class. In addition a three-hour written examination, covering the entire work of the year, is held at the completion of the work, besides subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an

adequate period it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department.

GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3, in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the Medical Chemistry of the second year, and in the near future to have it include much of the preliminary work of that course.

HISTOLOGY

The work in histology covers the second half of the school year, and is both didactic and practical. The practical work

in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises, conferences, and recitations will form a part of the course.

MATERIA MEDICA AND THERAPEUTICS

Instruction in therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

MEDICAL CHEMISTRY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in lectures, quizzes, and practical work in the laboratory. Every week there are three lectures and three quizzes of one hour each, besides sixteen hours required in the laboratory. The students first acquire a familiarity with proteins, carbohydrates, and fats,—the bases of food-stuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, feces, normal and abnormal. In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the period covered by the class. This work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in

autopsy technique will be given in the amphitheatre of the school.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all of the important subjects of general and special pathology. Special attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark on the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-class, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discuss-

ions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the department for Diseases of the Lungs of the Boston Dispensary, formerly President of the American Climatological Association, has been elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the clinic of the Boston Dispensary for diseases of the lungs will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with oppor-

tunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

GYNAECOLOGY AND ABDOMINAL SURGERY

Instruction is given both by lectures and clinical teaching. Lectures are given to the Junior class once a week on gynaecology, and once a week on abdominal surgery, including hernia, appendicitis, and the major operations on the female generative organs. There will also be several demonstrations of the various operations, on the cadaver.

Once a week a quiz is held on the lectures. Arrangements have been made by which the students of the Senior class may witness operations in the hospital service of the professor in charge.

DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great; examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

HYGIENE

Freshmen are taught elementary hygiene, and the benefits derived from wholesome associations, during the first half of the year.

The third year, the course in hygiene includes public sanitation. Water supplies, sewerage systems, house and school construction, municipal sanitation, industrial occupations, preventable diseases, vital statistics, and sanitary codes are among the subjects of lectures and recitations. During the second half of the year, Professor Austin, in connection with the work in hygiene, will instruct the class in the chemical analysis of air, water, and foods, chiefly by means of demonstration.

One of the objects of this study is to supply qualified candidates for Public Health Offices.

CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease.

Normal auscultation and percussion will be taught in the latter part of the second year. During the third year the work in auscultation and percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture twice a week in medical diagnosis. A course in haematology, including lectures and practical work, will be given by Dr. Strong.

During the fourth-year there will be three regular exercises weekly, besides numerous clinics. Professor Arnold will give a clinical lecture in the amphitheatre of the Boston City Hospital once a week throughout the school year. Patients from the hospital wards will be shown, and the diagnosis and treatment of these cases will be discussed. Third-year students will be admitted to this exercise. A second exercise will be held weekly at the school. These exercises will consist partly of didactic lectures supplementing the clinical lectures at the hospital, and partly of the discussion of clinical cases, in which both instructor and students take part. A number of these lectures will be devoted to the consideration of life insurance and other aspects of what may be termed mercantile medicine.

An additional series of lectures on military medicine, by As-

sistant Professor Dearing, will form part of the course in clinical medicine. The third exercise will be a clinical conference, one hour a week, under the charge of Dr. Chase. At this conference reports of cases written by the fourth-year students will be read, discussed, and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students will also be admitted to the clinical conferences.

Clinical exercises are held at the following institutions: Boston City Hospital, Carney Hospital, St. Elizabeth's Hospital, Boston Dispensary, and the Tufts College Medical School Dispensary. The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Another important feature of the instruction consists in visits made by the students with the district physicians of the Boston Dispensary. Here the students see cases of sickness in the home. They are not only instructed in the care of patients under these conditions, but have opportunities for following cases through every aspect of the disease. They will be required to make a special study of certain of these cases, and their written reports furnish much of the material for the clinical conferences.

The mark in clinical medicine is based on the practical work of the whole course; on a written report of two cases in the fourth year; on two one-hour written examinations in the third year, one in medical diagnosis and one in pulmonary diseases; and on the final three-hour written examination at the end of the fourth year.

CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully

discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continuing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston Dispensary, at the Carney Hospital, at St. Elizabeth's Hospital, and at the School Dispensary, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have numerous opportunities of administering ether, of assisting at operations, and, with certain limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the school during the first half year. These lectures are illustrated by

colored diagrams, models, pathological specimens, and the exhibition of instruments.

Clinical instruction in laryngology and rhinoscopy is given to small sections of the class in the clinic of the School Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is given to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases that the family physician is expected to care for. Opportunity is given also to see the more important operations of the nose and throat. Practical lectures will be given at the school. The class will visit, in sections, the clinics of the School Dispensary, and also the Boston Dispensary.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, the Carney Hospital, and the School Dispensary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

NEUROLOGY

The department of neurology has been entirely reorganized during the present year, under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented by lectures by Dr. Hoch, on the anatomy, physiology, and pa-

thology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

MENTAL DISEASES

Instruction in mental diseases will consist of a course of clinical lectures, so arranged as to cover the most important part of the subject. Last year, through the courtesy of the trustees and superintendent of the Boston Insane Hospital, many of the lectures were given in that institution, enabling the students to see the various forms of insanity at close range. A valuable clinic was held at the Massachusetts School for Feeble-Minded, where nearly all kinds of imbecility were seen and described by the superintendent. Correct methods of hospital management were also illustrated by what was being done at these institutions.

Clinics were held last year at the Boston Dispensary, and it is the intention to continue them, as far as possible according to the same methods.

CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

LEGAL MEDICINE

The instruction in legal medicine consists of one lecture each week for twelve weeks, and will include all the subjects which are usually embraced under the head of medical jurisprudence. Instruction will be given in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture a week at the school for the first half-year, and two exercises a week during the second half-year, at the Carney Hospital, the class being divided into sections. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative orthopedic work.

MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. Instruction is given in the methods of physical examination, the preparation of certificates, and other allied subjects. The instruction is given by Professor Arnold and Assistant Professor Dearing, in connection with the department of clinical medicine.

OTOLOGY

The instruction in otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary. An elective course consists of clinical work at the same institution.

ELECTRO-THERAPEUTICS

The work in electro-therapeutics will consist of twelve lectures, with quizzes. The lectures include the exhibition of

apparatus, and explanation of the various methods of the application of electricity in disease.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from October to December. Besides, from January to June, there will be three clinics weekly at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable.

DISEASES OF THE RECTUM

Instruction in the diseases of the rectum will be given by Dr. Stedman, at the Boston Dispensary.

NORMAL MEDICAL PSYCHOLOGY

An optional course of lectures in normal medical psychology will be given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations certain topics of great practical importance to the medical practitioner: such topics for example as suggestibility and hypnosis, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. But, in addition to this, the chief value perhaps of such information, the lectures will afford a brief basis of general psychology, which will tend to make the mental phenomena of the diseases of the mind and nervous system more easily understood. The lectures will be given by Assistant Professor Dearborn.

Requirements

FOR ADMISSION TO FIRST-YEAR CLASS

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(a) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1902 and 1903 will be chosen from the following :—

(1) Shakespeare's Merchant of Venice: (2) Thackeray's Henry Esmond: (3) Burke's Speech on Conciliation with America: (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(b) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(c) Plane Geometry.

(d) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(e) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Students applying for admission to this school are advised to prepare themselves in Elementary French and German, although at the present time no entrance examination in these branches is required.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed

to begin his second year whose entrance conditions are not made up.

EXCEPTIONS.—Graduates of approved high and preparatory schools will be admitted on presentation of approved entrance certificates; also students holding certificates of entrance to a college or university, those holding the State of New York Regents' certificate, and graduates of a college or university will be admitted without entrance examination. The institutions, however, issuing certificates must be accredited as standard by the communities within which they are located.

Examinations will be held on the second Monday in June, and on the Saturday before the commencement of lectures.

Candidates who intend taking entrance examinations are required to notify the Secretary on or before Sept. 14, 1903.

Advanced Standing

Students of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in anatomy, physiology, general chemistry, and histology, may be admitted to the second-year class.

No credit will be given for examinations passed at other schools.

Students from other schools who are candidates for advanced standing must present themselves for examination on Monday, Sept. 28, 1903.

Promotion

Students who have passed a majority of the first-year examinations, and who have made up all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

The Third-Year Class

Students who have passed all the first-year examinations, and a majority of the second-year examinations, may be admitted to the third-year class.

The Fourth-Year Class

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

GRADUATION**For the Degree of M.D.**

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:

1. They must furnish certificates that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of medical lectures at some accredited medical college, the last of which shall have been at this school, and no two courses in the same twelve months.
3. They must have passed all the required examinations.
4. They must have attended two cases of obstetrics.
5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.
6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

OUTLINE OF THE COURSE

First Year

Descriptive Anatomy.—Lectures, demonstrations, recitations, and dissecting. *Eight hours a week during the first semester.*

General Chemistry.—Lectures, and required laboratory work. *Thirteen hours a week during the first semester.*

Physiology.—Lectures, demonstrations, conferences, recitations, and experimental work in the laboratory. *Twelve hours a week during the second semester.*

Histology.—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the second semester.*

Hygiene.—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

Second Year

Pathology.—Lectures, demonstrations, and required laboratory work. *Twelve hours a week during the second semester.*

Bacteriology.—Lectures and required laboratory work. *Five hours a week during the second semester.*

Materia Medica and Therapeutics.—Lectures and recitations. *Four hours a week during the first semester.*

Medical Chemistry and Toxicology.—Lectures and required laboratory work. *Twelve hours a week during the first semester.*

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

Bandaging and Apparatus.

Normal Auscultation and Percussion.

Third Year

Theory and Practice of Medicine.—Lectures, and recitations. *Four hours a week.*

Surgery.—Lectures and recitations. *Three hours a week.*

Obstetrics, including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

Ophthalmology.—*Two hours a week.*

Abdominal Surgery and Gynaecology.—Lectures and recitations. *Three hours a week.*

Laryngology.—*Two hours a week.*

Pediatrics.—*Six hours a week.*

Hygiene.—*One hour a week.*

Auscultation and Percussion.—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year

Clinical Medicine, Clinical Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added Ophthalmology and Laryngology. Electro-Therapeutics and Legal Medicine cannot be taken as electives.

There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

EXAMINATIONS

There are two periods of examination each year in the college building. They are in writing, and are held the week before the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

- (a) Students commencing the study of medicine.
- (b) Students applying for advanced standing.
- (c) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 14, 1903. Students intending to take any of the spring examinations must register their names with the Secretary, on or before May 1, 1903.

Students who have failed twice in their examination upon any subject will not be admitted to a third examination without the payment of an extra examination-fee of five dollars.

Students are eligible for their examinations as follows: those of the first year at the close of the first year's course; those of the second year at the close of the second year's course, provided they have passed a majority of the first year examinations, and all entrance conditions; those of the third year at the close of the third year's course, provided they have passed all of the first-year and a majority of the second-year examinations; those of the fourth year at the close of the fourth year's course, provided they have passed all of the first and second-year examinations, and a majority of those of the third year.

TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Gerrish, Quain, Morris, Weisse, Holden, Haynes' Dissector.

Physiology.—American Text-book, Raymond, Foster, Verworn, Landois and Sterling, Porter, Chapman, Schäfer.

General Chemistry.—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr.

Medical Chemistry.—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

Collateral Reading.—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

Materia Medica and Therapeutics.—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Clinical Gynaecology.—Davenport, Dudley, Greig-Smith.

Surgery.—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

Clinical and Operative Surgery.—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Bryant's Operative Surgery, Zuckerkandyl's Operative Surgery, Da Costa.

Practice of Medicine.—Osler, Tyson, Thompson, Strümpell, Eichhorst, Ander's Practice of Medicine.

Dermatology.—Diseases of the Skin by Hyde and Montgomery, During, Stelwagon, Crocker, Kaposi, Besmer.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Da Costa's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Church and Peterson, Gower, Dana, Dercum.

Mental Diseases.—Chapin, Clouston, Peterson, Lewis, Dictionary of Psychological Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Bosworth, Shurley, Hall, Coakley and Ballinger on Diseases of the Nose and Throat.

Diseases of the Rectum.—Kelsey's Surgery of the Rectum and Pelvis.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—De Schweinitz, Nettleship, Noyes.

Medical Dictionary.—Gould, Dunglison.

EXPENSES

First Year

Matriculation	. . . . .	\$ 5.00
Tuition	. . . . .	120.00
Dissecting	. . . . .	At cost

Second Year

Matriculation	. . . . .	\$ 5.00
Tuition	. . . . .	120.00
Dissecting	. . . . .	At cost.

Third Year

Matriculation	. . . . .	\$ 5.00
Tuition	. . . . .	120.00

Fourth Year

Matriculation	\$ 5.00
Tuition	90.00
Graduation fee	30.00
Postgraduate fee for graduates of other schools	120.00
Single course	30.00
Postgraduate fee for graduates of this school	60.00
Single course	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees and charges of every kind are settled.

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to

students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Boston Dispensary, the Carney Hospital, the Tremont Dispensary, the Cambridge Hospital, the Free Home for Consumptives, the Free Hospital for Women, the Women's Charity Hospital, St. Mary's, the Good Samaritan, and the Dispensary of the Medical School, in which over eight thousand visits were made in the year 1901-02.

LIBRARIES

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than fifteen thousand books upon medical subjects.

SESSIONS OF THE SCHOOL

The annual course of lectures, after the session of 1902-03, begins on the first Tuesday in October of each year, and continues until the last Wednesday in May.

The annual course of lectures for 1902-03 will commence Wednesday, October 1, 1902.

VACATIONS

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

Summer Courses

The following laboratory subjects are offered during the summer months:-

PHYSIOLOGY

A course in Physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and reci-

tations adequate to the outlines and basal principles of physiology. The fee for this class will be twenty dollars.

MEDICAL CHEMISTRY

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advanced work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

HISTOLOGY

A summer course in Histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

STANDING AND CERTIFICATES

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who intend entering the school are required to write for an application-blank, and forward it to the Secretary.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the school.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week.

Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city not approved by the Faculty.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled. *All students must fill out and deposit a registration blank before October 16.*

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary. Tufts College Medical School, Boston, Mass.

THE DENTAL SCHOOL

Faculty of the Dental School*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . 8 Professors Row
PRESIDENT, and Professor of Moral Philosophy and Political Economy

HAROLD WILLIAMS, A.B., M.D. 528 Beacon St., Boston
DEAN, and Professor of the Theory and Practice of Medicine

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
*SECRETARY, and Professor of General, Descriptive, and Applied
 Anatomy*

HENRY JABEZ BARNES, M.D. 429 Beacon St., Boston
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., Ph.D. South Braintree
Professor of General Chemistry

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
Professor of the Theory and Practice of Dentistry

EDWARD WALTER BRANIGAN, D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. North Abington
Professor of Materia Medica and Therapeutics

JOSEPH KING KNIGHT, D.D.S. Hyde Park
Professor of Prosthodontia

GEORGE ANDREW BATES, D.D.S. Auburndale
Professor of Dental Histology

JOHN CUMMINGS MUNRO, A.B., M.D. . . 173 Beacon St., Boston
Professor of Oral Surgery

FREDERICK MORTIMER HEMENWAY, D.D.S.
Professor of Prosthetic Dentistry 88 Boylston St., Boston

TIMOTHY LEARY, M.D. 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., Ph.D.
Assistant Professor of Physiology 150 St. Botolph St., Boston

* The names of the Dental Faculty are arranged in three groups: Professors, Assistant Professors, and other instructors. Within each group the order is that of academic seniority.

OTHER INSTRUCTORS

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

BYRON HOWARD STROUT, D.D.S. Taunton
Lecturer on Operative Technics and Instructor in Anaesthesia

WALTER IRVING BRIGHAM, D.D.S. South Framingham
Lecturer on Operative Dentistry

GEORGE LYLE MARSHALL, D.D.S. 5 Bow St., Somerville
Instructor in Prosthetic Dentistry

FRED CARVILL MERRILL, D.D.S. Wollaston
Instructor in Prosthetic Dentistry

WILLIAM RICE, D.D.S. 845 Boylston St., Boston
Instructor in Clinical Dentistry

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston
Instructor in Clinical Dentistry

HENRY HILDRETH PIPER, D.D.S. Winter Hill, Somerville
Instructor in Clinical Dentistry

KNUT JOSEPH LUTTROP, D.D.S. . . . 419 Boylston St., Boston
Demonstrator in Operative Dentistry

JOHN WOOD FORBES, D.D.S. 419 Boylston St., Boston
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

FREDERIC W. PEARL, A.B., M.D.
 Hotel Vendome, Commonwealth Ave., Boston
Assistant Demonstrator of Anatomy

BURLEIGH CHILDS GILBERT, D.D.S. Stoneham
Instructor in Clinical Dentistry

JOHN INNES FRENCH, M.D. 2A Park St., Boston
*Instructor in Materia Medica and Therapeutics, and Assistant in
 Clinical Medicine*

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston
Instructor in Clinical Dentistry

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.
Assistant Demonstrator of Anatomy 84 Boylston St., Jamaica Plain

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

WALTER FORSYTHE WINCHESTER, D.D.S.

Instructor in Prosthetic Dentistry

372 Boylston St., Boston

ADELAIDE OLGA CUSHING-LEARY, M.D.

Assistant in Pathology and Bacteriology Cushing Hospital, Roxbury

Administrative Committee of the Dental School

The PRESIDENT, the DEAN, the SECRETARY, and DRS. BRANIGAN and BATES

LABORATORY ASSISTANTS

Anatomy

L. MARY-BELLE HOLT, B.L. Portland, Me.

HORACE G. WHEATON Boston

Physiology

WILLIAM L. RIPLEY Newton

FREEMAN A. TOWER Boston

MARGARET E. CARLEY Winthrop

WILLIAM D. WALKER Somerville

HARRY W. CLARK N. Woburn

Histology

GEORGE W. DERRICK Cambridge

HORACE K. RICHARDSON, JR. Medford

Pharmacology

JOHN J. GIBBONS Clinton

OTHER OFFICERS

HERBERT T. BROWN Tufts College

Bursar

MARY WRIGHT RICHARDSON

Clerk in Infirmary

SARAH ELIZABETH MILLER

Clerk in the Prosthetic Department

FRANCES WILDER

Matron in the Operating-Room

The Dental School

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces four academic years of nine months each. The studies of the first year, and a portion of those of the second year, are identical with those of the Medical School. Instruction is given by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, *materia medica*, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory

specimens of the different forms of mechanical work made by himself in the laboratory of the school, and under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has always been to give its students such a training as will not only insure to them the knowledge necessary to equip them for the practical part of the dentist's work, but also inspire in them a respect for the dignity of the profession which they seek to enter.

It is believed that the dentist is not over-educated who is possessed of a working knowledge of the fundamental elements of the science of medicine. Such knowledge can but inspire him with more profound respect for his own branch of study, which stands so closely related to the mother science. But, while the School seeks to keep constantly before the student the need for a proper appreciation of the character and standing of his professional relations, no pains are spared to give abundant instruction in all the elements which pertain to the subject that are needed to graduate well-trained, practical dentists.

Attention is therefore called to the fact that the student, during three entire years of his course, is under the supervision of a professor and his demonstrators, who are in daily attendance at the infirmary.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all con-

nected with the school are urged to avail themselves of the facilities thus offered.

THE NEW BUILDING

Owing to the rapid growth of the Medical and Dental departments of the College, it was found necessary to provide increased laboratory facilities. Accordingly, in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. The new building is now completed and occupied. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It was designed by Mr. J. Philip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among the best equipped and the most complete dental infirmaries in this country. The prosthetic department which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The building may be reached by any Huntington avenue car with the exception of those of the Cross Town and Cambridge Lines.

Course of Instruction

ANATOMY

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in anatomy will consist of lectures, recitations, and practical work in the dissecting room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

CHEMISTRY

The work in chemistry is divided into two parts. During the first half of the first year it is the same as is given to the students of the Medical School. There are five lectures and two recitations each week, with six hours or more of work in the laboratory, including descriptive chemistry, qualitative analysis, and so much of theoretical chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference is made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. This part of the work will be much extended in the near future, the high importance of chemistry to the dental profession being fully recognized.

PHYSIOLOGY

The instruction in physiology is given throughout the latter half of the first year, it being half of the student's work during that period. It consists of recitations, lectures, laboratory work, and conferences.

In the recitations, familiarity with the substance of the American Text Book of Physiology is required, the stress being put upon the human bodily functions. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination will be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the department. In addition, a three-hour written examination, covering the entire work of the year, is held at its completion, besides subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department.

HISTOLOGY

The subject of histology covers the second half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the work covers the study of the elementary tissues, treated comprehensively, beginning with their origin in

the embryo. Dental histology will be taught during the second year. Particular attention will be given, in this department, to the study of the minute anatomy of the tooth. The development of the teeth will receive careful treatment. A training which promises knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

HYGIENE

Freshmen of the Dental and the Medical Schools are jointly taught elementary hygiene during the first half of the year.

In the absence of home influences, the benefits derived from pure associates, and from wholesome surroundings, are considered of paramount importance. Rational physical exercise, bathing, clothing, air, water, and foods; the transmissible diseases and their mode of transmission, are other topics of the lectures on hygiene.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the minds of the students. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

DENTAL TECHNICS

A well lighted and convenient room has recently been fitted for the use of the class in operative technics. Instruction will be given in this department, both by lectures from the instructor in charge, illustrated by models and lantern slides, and by practical work on the part of the student. The practical work will include the study of the forms of teeth, with carvings in ivory, study of the position and form of pulp chambers and canals, with dissection of teeth, proper methods of opening and filling pulp canals, and operations on natural teeth; also proper methods of forming cavities for filling, and the manipulation of filling materials. *

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The course of instruction in prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course to the second-year class in making and tempering instruments. Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work and the application of continuous gum to platina; to the manufacture of porcelain teeth in single and block forms; and to crown and bridge work. The natural form, color, and arrangement of the

*NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

ORTHODONTIA

The most important part of the course in orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

MATERIA MEDICA AND THERAPEUTICS

Instruction concerning *materia medica* and therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class, in sections, is taught by practice. Prescription writing, and the metric system, will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given special attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria,

will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures, and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the school occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and board of instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsillitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the

utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

ORAL SURGERY

It is the intention of this department not only to afford instruction in local affections which are found in the tissues about the oral cavity, but also to acquaint the student with such subjects in general surgery as have even remote connection with oral and dental surgery. The lectures are supplemented by frequent clinics, both at the infirmary and at the hospital. The use of anaesthetics is exemplified in the weekly clinics for extraction, and in the hospital service of the Professor of Surgery.

ANAESTHESIA AND EXTRACTION

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth, and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

CLINICAL CONFERENCE

Each clinical conference consists in the reading of the written report of an actual case by a student of the Senior class, at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

Requirements

FOR ADMISSION

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies :—

(*a*) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1902–1903 will be chosen from the following :—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America, (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries; also the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions: Graduates of high and preparatory schools will be admitted on presentation of approved entrance certificates; also students holding certificates of entrance to a college or university, those holding the Regents' certificate of the State of

Fourth Year. Morning hours at the Dental School Infirmary, and Prosthetic Laboratory, including practical anaesthesia and extraction: Clinical Surgery at the Hospital.
Afternoons: Operative Dentistry, Prosthetic Dentistry, Orthodontia, Crown and Bridge Work, Theory and Practice of Dental Medicine. Clinical Conferences in Operative and Prosthetic Dentistry.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Cryer's Internal Anatomy of the Face. Weisse, Quain. Morris, Black's Dental Anatomy.

Physiology.—American Text Book. Foster, Raymond, Schäfer, Porter. Verworn.

Chemistry.—Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition)

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth. Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica.—Shoemaker (4th edition), Bruce, White, Bartholow (8th edition).

Therapeutics.—Cushing, Bartholow, Wood, Hare, United States Dispensatory, Gerrish's Prescription Writing.

Practice of Surgery.—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry. Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

EXPENSES

First Year

Matriculation	. . . . .	\$ 5.00
Tuition	. . . . .	120.00

Second Year

Matriculation	. . . . .	\$ 5.00
Tuition	. . . . .	120.00

Third Year

Matriculation	\$ 5.00
Tuition	120.00

Fourth Year

Matriculation	\$ 5.00
Tuition	90.00
Graduation Fee	30.00
Postgraduate fee for graduates of other schools . .	120.00
Single course	30.00
Postgraduate fee for graduates of this school . . .	60.00
Single course	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the purpose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from \$4 to \$7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

General Information

This School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

SESSIONS

The annual course of lectures, after the session of 1902-03, begins on the first Tuesday in October of each year, and continues until the last Wednesday in May. The session of 1903-04 will commence Tuesday, October 6.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, and the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students intending joining the School for the first time may obtain from the Secretary an application blank, which they are required to fill out and return to the Secretary.

REGISTRATION

The registration is required of all students, yearly. Properly filled entrance blanks for the year of 1903-04 must be deposited with the Secretary before October 16.

ENTRANCE EXAMINATIONS

For the session of 1903-04 the entrance examinations will be held at the School on Monday, June 8th, 1903, and Saturday, October 3, 1903. Students conditioned in entrance requirements must remove their conditions upon those dates.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.

THE
BROMFIELD-PEARSON
SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

ELMER H. CAPEN, D.D., PRESIDENT

GARDNER C. ANTHONY, A.M., DEAN

SAMUEL C. EARLE, A.M.

Assistant Professor of English

GEORGE FRANCIS ASHLEY

Instructor in Drawing

LESLIE C. WELLS, A.M.

Instructor in French

CHARLES E. STEWART, S.B.

Instructor in Shopwork

MARTIN L. KIDDER

Assistant in Mathematics

The Bromfield-Pearson School

The Bromfield-Pearson School is designed to meet the wants of young men whose preparation for engineering studies may be deficient in some of the required branches, but whose practice and experience in the applied part of engineering may qualify them to pursue some of the regular subjects while making up their deficiencies.

Thus a student may review all of academic algebra, or geometry, in one year, while pursuing college work in the subjects for which he may be prepared. Elementary instruction in French and English is given in the same manner, an arrangement which enables young men of mature mind and industrious habits to do the work required in a fitting school while anticipating much of the college course. Students who have already acquired a trade will save many hours required for work in the college course, and in most cases they profit much from their experience, in the keener appreciation of engineering studies. The Bromfield-Pearson School is not intended for those who should attend the regular high school or manual training course, but is designed to make the college course possible to many who have been deprived of these opportunities and cannot afford the time ordinarily required in a fitting school.

A two-years' course of study is provided. The first year may be taken as preparatory, either to the Engineering Department of the College, or to the technical course of the School. The course for the second year is arranged to meet the wants of those who are unable to continue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes elementary mathematics, mechanics, and technical drafting.

The Bromfield-Pearson Building is a three-story building

one hundred by fifty feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the school, and the department of drawing and shop work in the College. One room is set apart as a study for such of the students as do not room at the College. For a fuller description of the building see page 151.

Course of Study

FIRST YEAR

Preparatory Course

Algebra (Academic) will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

Geometry. The work comprises plane geometry and all of solid geometry, including spherical.

Plane Trigonometry may be taken during the fourth quarter.

English Grammar and Composition is pursued throughout the year.

French for the entire year is required of those who are preparing for a college course.

Drawing (Freehand) comprises the work required for entrance to the College, together with a course in Technical Sketching.

Drawing (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the work in Freehand Drawing are identical with the college work in the same subjects, and all, or a part of these, may be omitted by students fitting for college.

Descriptive Geometry may be taken by such students as are sufficiently prepared to enter the college class. This subject is pursued during the second term, and is required of those taking the two-years' course.

Electives

Those who are sufficiently prepared in any of the studies named above may elect more advanced subjects, as follows:—

Preparation in elementary algebra, as indicated above, will admit to the course in COLLEGE ALGEBRA.

Preparation in elementary algebra, together with plane and solid geometry, will admit to FRESHMAN MATHEMATICS.

As the instruction in DRAWING is largely individual, the student may take the grade for which he is prepared.

SHOPWORK may be taken at any time when it will not interfere with required work.

PHYSICS. (See page 80.)

SECOND YEAR

Special Engineering Course

The Second Year is intended only for those who do not enter the Engineering Department of the College. Students will be admitted to college classes for which they may be fitted.

Advanced Algebra and Trigonometry are pursued with the college classes during the first term.

Analytical Geometry is taken during the second term.

Calculus. A special course is given during the second term. This subject is elementary, and is designed to give the student such a knowledge of the practical use of the Calculus as shall enable him to read, in an intelligent manner, books involving its use.

Mechanics involves the use of an elementary treatise, including the subject of Graphic Statics.

Machine Drawing. The work in Machine Drawing is conducted as in a well-organized drafting-room. It consists largely of freehand sketches and plainly finished drawings, made according to approved systems.

Mechanism. Under the head of Mechanism, cams, gearing, links, and other mechanical motions are treated, and much stress is laid on the practical application of principles.

Machine Design is begun as soon as the student has become proficient in the preceding subjects, and has acquired neatness, accuracy, and rapidity of execution.

Steam Engine. A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of VALVE GEARS is considered at this time. The student is also taught to apply the INDICATOR, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

Moulding. A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns.

ELECTIVES

The following subjects may be pursued in connection with the foregoing, when time and previous preparation will permit :—

Pattern Making. The work in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding.

Forging. In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, upsetting, welding, tempering, and case-hardening.

Machine Work. Vise work in iron includes surface chipping, squaring and fitting, key-seating, scraping, and polishing. The machine practice consists not only in turning, planing, drilling, boring, and milling operations, but in the careful study of the machines, their efficiency, and capabilities.

Physics. (See page 80).

Chemistry. Instruction in Chemistry is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, cover the ground of theoretical and descriptive inorganic chemistry. Students are charged for breakage, and four dollars a term for materials used.

General Information

REQUIREMENTS FOR ADMISSION

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they may elect. This may be done by certificate from a school previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

REGULATIONS OF THE SCHOOL

Students are subject to the rules governing students of the College.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon. Any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular college courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Certificates of proficiency are given the special Engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given, or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before the 15th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in private families at \$3.50 to \$5.00 for table board, and \$1.50 to \$2.00 for furnished room. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses: --

Tuition	\$120.00	\$120.00
Half-room rent	15.00	75.00
Board, \$3.50 to \$4.50 a week (36 weeks) . . .	126.00	162.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
	<hr/>	<hr/>
Total	\$276.00	\$392.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

THE SUMMER SCHOOLS

The Summer Schools

THE SUMMER SCHOOL AT TUFTS COLLEGE

Instructors

FRANK G. WREN, A.M.

Professor of Mathematics

LAWRENCE B. EVANS, PH.D.

Professor of History

THOMAS WHITTEMORE, A.B.

Assistant Professor of English

THE HARPSWELL LABORATORY

Instructors

J. STERLING KINGSLEY, S.D.

Director, and Professor of Biology

FRED D. LAMBERT, PH.D.

Assistant, and Instructor in Natural History

The Summer Schools

THE SUMMER SCHOOL AT TUFTS COLLEGE

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In the summer of 1900, classes in Mathematics and English were added. History was taught in 1902.

In 1902, instruction in History covered the subjects, History 1, 2, and 3 (see pages 74 and 75). Instruction was also given in English composition, in Literature equivalent to English 13, 15, and 18 (see pages 59, 60), and in Oratory 1, (see page 61). When satisfactorily completed, the work done in the Summer School can be counted toward a degree.

Board and furnished rooms can be obtained for six dollars a week, or board alone for three dollars and a half a week.

The tuition ordinarily is twenty dollars for each subject pursued. For a list of students in the Summer School at the College in the summer of 1902, see Register of Students.

All inquiries concerning the Summer School should be addressed to Professor H. G. CHASE, SECRETARY, Tufts College, Mass.

THE HARPSWELL LABORATORY

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1903 from June 22 until the middle of September. Instruction will be given in zoology,

botany, and beginning research. Instruction will commence July 1, and will continue six weeks. For each subject a fee of twenty dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms, and a few tables in the large laboratory, for research students, the fees for these being fifteen and ten dollars, respectively, for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses where board and rooms may be had, at five dollars a week and upward.

For a list of the students in the Harpswell Laboratory, during the summer of 1902, see the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

REGISTER OF STUDENTS

Graduate Department

Fellows

- GOODENOW, VALERIA STONE *West Newton* *16 Regent St.*
A.B., Vassar, 1901 Miner Fellow in Natural History First Year
Biology.
- RUDDICK, WILLIAM HENDERSON *East Boston* *502 East Broadway*
M.D., Harvard, 1868 B.A.S., Harvard, 1881 Fellow by courtesy in
Natural History Biology
- THYNG, FRED WILBUR *Ross Corner, Me.* *12 Emery St.*
A.B., Colby, 1902 Olmstead Fellow in Natural History First Year
Biology.

Resident Students

- HAPGOOD, ERNEST GRANGER *West Newbury*
A.B., 1901 First Year Economics and Sociology
- LUNT, FORREST SUMNER *Somerville* *89 Monroe St.*
A.B., 1902 First Year History and Public Law
- TARBOX, CARL CLIFTON *Tufts College*
A.B., 1900 First Year English
- TITUS, MARIAN LUCY *Tufts College* *10 Raymond Ave*
A.B., 1902 First Year English

Undergraduate Students

(doing advanced work as candidates for a higher degree)

- MARY WINSHIP KINGSLEY *128 Professors Row*
History and Economics
- ETHEL FRANCES LITTLEFIELD *Allen House*
Greek
- LAWRENCE MARSDEN PRICE *Δ T House*
History and Public Law
- CHANDLER MASON WOOD *Dean Hall, 5*
History and Public Law

Courses in Arts and Sciences

[In the following list the course pursued by each student is indicated by the italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *che*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*; to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in chemistry, *ch*; and Medical Preparatory, *mp*.]

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.

Senior Class

Bruce, Blanche Louise	<i>ab</i>	<i>West Somerville</i>	120 Curtis St.
Bursch, Clare Louise	<i>ph</i>	<i>Hyde Park</i>	Metcalf Hall, 12
Bush, Edith Linwood	<i>ab</i>	<i>Chelsea</i>	Metcalf Hall, 4
Cannell, Winburn Scott	<i>ab</i>	<i>Bridgton, Me.</i>	85 Jenny Lind Ave.
Coolidge, Arthur William	<i>ab</i>	<i>Portland, Me.</i>	Θ Δ X House
Coombs, Isabel Hall	<i>ab</i>	<i>Stoneham</i>	Metcalf Hall, 1
Cooper, Ashton Bardolph	<i>ee</i>	<i>Bloomfield, Ont.</i>	Z Ψ House
Crowell, Hannah	<i>ab</i>	<i>Woods Hole</i>	Metcalf Hall, 13
Dame, Olive Arnold	<i>ab</i>	<i>Medford</i>	<i>Hastings Lane</i>
Farnsworth, Louise Melinda	<i>ab</i>	<i>Natick</i>	Metcalf Hall, 3
Fisher, Gertrude Isabelle	<i>ab</i>	<i>Fitchburg</i>	Metcalf Hall, 5
Fox, Carrie Edwards	<i>ab</i>	<i>W. Somerville</i>	123 College Ave.
Friend, Edna Mary	<i>ab</i>	<i>W. Somerville</i>	33 Wallace St.
Gibbs, Julia Frances	<i>ab</i>	<i>Waltham</i>	51 Harris St.
Hall, Samuel Thomas	<i>ee</i>	<i>Newton Highlands</i>	
Hayden, Philip Meserve	<i>ab</i>	<i>Augusta, Me.</i>	Δ T House
Hersey, Harry Adams	<i>ab</i>	<i>Dorchester</i>	West Hall, 3
Hixon, Beulah Sinclair	<i>ab</i>	<i>Chelsea</i>	Metcalf Hall, 16
Kingsley, Mary Winship	<i>ab</i>	<i>Tufts College</i>	128 Professors Row
Knight, Thomas Sawyer	<i>ee</i>	<i>Tufts College</i>	114 Professors Row
Lauriat, Leonard	<i>ee</i>	<i>Medford</i>	8 Oakland St.
Lewis, Henry Palmer	<i>ph</i>	<i>Randolph, Vt.</i>	West Hall, 2
Linscott, Harry DeLuce	<i>ph</i>	<i>North Woburn</i>	East Hall, 4
Littlefield, Ethel Frances	<i>ab</i>	<i>Braintree</i>	Allen House
Lowell, Charlotte Raymond	<i>ab</i>	<i>Somerville</i>	37 Harvard St.
Lyons, Lena Abbie	<i>ab</i>	<i>Bradford</i>	Metcalf Hall, 3
Marion, Guy Elwood	<i>ab</i>	<i>Woburn</i>	A T Ω House
Merritt, Harry Tirrell	<i>ph</i>	<i>South Weymouth</i>	East Hall, 4

Moore, Ethel Almira	<i>ab</i>	<i>Somerville</i>	<i>37 Madison St.</i>
Moulton, Oren McKenney	<i>ce</i>	<i>So. Gorham, Me.</i>	<i>15 Curtis Ave.</i>
Murphy, Arthur, Jr.	<i>ch</i>	<i>Wollaston</i>	<i>Z ♀ House</i>
Nason, Robert Edward	<i>ab</i>	<i>Jamaica Plain</i>	<i>Θ Δ X House</i>
Page, Harry Stanley	<i>ce</i>	<i>No. Woburn</i>	<i>East Hall, 22</i>
Preble, Alfred Emerson	<i>bi</i>	<i>Wilmington</i>	<i>East Hall, 22</i>
Price, Lawrence Marsden	<i>ab</i>	<i>Cambridge</i>	<i>Δ T House</i>
Puffer, Ethel Winnifred	<i>ab</i>	<i>Tufts College</i>	<i>Start House</i>
Ryan, Olive Katherine	<i>ab</i>	<i>Waltham</i>	<i>274 School St.</i>
Spear, Stanley Gates, B.D.	<i>ab</i>	<i>Somerville</i>	<i>28 Appleton St.</i>
Story, Chester Bradstreet	<i>ph</i>	<i>Uxbridge</i>	<i>West Hall, 2</i>
Towle, Walter Volney	<i>ph</i>	<i>New York City</i>	<i>Δ T Δ House</i>
Wood, Chandler Mason	<i>ab</i>	<i>Fort Plain, N. Y.</i>	<i>Dean Hall, 5</i>

Junior Class

d'Amaral, Joseph	<i>ce</i>	<i>Azores Islands</i>	<i>East Hall, 15</i>
Barnett, Stella May	<i>ab</i>	<i>North Attleboro</i>	<i>Metcalf Hall, 11</i>
Bartlett, Daisy Mae	<i>ab</i>	<i>Somerville</i>	<i>47 Madison St.</i>
Bearce, Clarence Prescott	<i>ch</i>	<i>Medford</i>	<i>Θ Δ X House</i>
Berry, Charles Franklin, Jr.	<i>ab</i>	<i>Mattapan</i>	<i>West Hall, 23</i>
Bond, Alfred Moore	<i>ce</i>	<i>Hudson</i>	<i>Dean Hall, 5</i>
Bray, Bertha	<i>ab</i>	<i>Tufts College</i>	<i>98 Professors Row</i>
Bray, Compton Durlin	<i>ab</i>	<i>Tufts College</i>	<i>98 Professors Row</i>
Burnell, William Victor	<i>ce</i>	<i>Medford Hillside</i>	<i>West Hall, 18</i>
Chism, James Whiton	<i>ce</i>	<i>Westford, Conn.</i>	<i>East Hall, 3</i>
Clark, Alice Wellington	<i>ab</i>	<i>Waltham</i>	<i>Start House, 4</i>
Clark, Georgiana	<i>ab</i>	<i>Somerville</i>	<i>60 Central St.</i>
Clifford, John William	<i>ab</i>	<i>Naugatuck, Conn.</i>	<i>28 Professors Row</i>
Countway, Gussanda	<i>ab</i>	<i>Somerville</i>	<i>28 Robinson St.</i>
Creeley, Oscar Slade	<i>mp</i>	<i>Belmont</i>	
Crowell, Mertie	<i>ab</i>	<i>Woods Hole</i>	<i>Metcalf Hall, 13</i>
Cummings, Alice Josephine	<i>ab</i>	<i>Medford</i>	<i>209 Main St.</i>
Curtis, Helen Clare	<i>ab</i>	<i>Addison, Me.</i>	<i>Start House, 7</i>
Cushing, Mary Magdalen	<i>ph</i>	<i>Boston</i>	<i>168 Newbury St.</i>
Draper, Ernest Sparrell	<i>ce</i>	<i>Wayland</i>	<i>East Hall, 30</i>
Druley, Elmer Morey	<i>ph</i>	<i>Belpie, O.</i>	<i>Δ T House</i>
Ellis, Arthur Eugene	<i>ch</i>	<i>Somerville</i>	<i>West Hall, 7</i>
Fay, Harold	<i>ab</i>	<i>Tufts College</i>	<i>West Hall, 21</i>
Fleming, Patrick William	<i>ce</i>	<i>Thorndike.</i>	<i>West Hall, 14</i>
Forrest, Oscar Edmund	<i>ce</i>	<i>Medford</i>	<i>Δ T House</i>
Frossard, Helen Amelia	<i>ab</i>	<i>East Pepperell</i>	<i>Metcalf Hall, 8</i>
Harmon, Betsy Barker	<i>ab</i>	<i>Adams</i>	<i>Metcalf Hall, 2</i>
Hazeltine, William Everett	<i>ce</i>	<i>Lynn</i>	<i>East Hall, 30</i>
Hennelly, Thomas Patrick	<i>ab</i>	<i>Waltham</i>	<i>Dean Hall, 7</i>

Hill, Robert William	<i>ab</i>	<i>Salem</i>	West Hall, 6
Hill, Sherburne	<i>ce</i>	<i>Methuen</i>	Δ T House
Hood, James Henry	<i>ce</i>	<i>Franklin</i>	A T Ω House
Hooper, Blanche Heard	<i>ab</i>	<i>Tufts College</i>	124 Professors Row
Kennard, William Oliver	<i>ce</i>	<i>Somerville</i>	21 Wheeler St..
Kimball, Ralph Elmore	<i>ce</i>	<i>Lynn</i>	ZΨ House
Lowe, George Albert, Jr.	<i>ce</i>	<i>Rockport</i>	A T Ω House
McAllister, Florence Lillian	<i>ab</i>	<i>W. Somerville</i>	23 Wallace St.
McMahon, Charles Edward	<i>ab</i>	<i>Randolph</i>	West Hall, 10
Marr, Myron Whitmore	<i>mp</i>	<i>Dorchester</i>	West Hall, 18
Mason, Joseph Eaton	<i>ab</i>	<i>Chicago, Ill.</i>	Z Ψ House
Maxwell, Leon Ryder	<i>ab</i>	<i>Medford</i>	Δ T House
Mayhew, Alfred Boardman	<i>ce</i>	<i>Shelburne Falls</i>	East Hall, 2
Moore, Fred Atkins	<i>ab</i>	<i>Somerville</i>	10 Grant St.
Morley, Raymond Kurtz	<i>ab</i>	<i>Newton Centre</i>	East Hall, 19
Munro, Melville Smith	<i>ce</i>	<i>Medford</i>	59 George St.
Newell, Lewis Winslow	<i>ab</i>	<i>Salem</i>	East Hall, 24
Norcross, Theodore White	<i>ce</i>	<i>Medford</i>	Δ T House
Parker, Clara Elizabeth	<i>ab</i>	<i>Middleboro</i>	Metcalf Hall, 9
Parker, Jessie Merrill	<i>ab</i>	<i>Uxbridge</i>	Start House, 3
Pearson, George Edward	<i>ab</i>	<i>W. Somerville</i>	325 Highland Ave.
Peirce, Arthur Cyrus	<i>ce</i>	<i>Athol</i>	Dean Hall, 7
Perkins, Henry Farnsworth	<i>me</i>	<i>Haverhill</i>	Δ T House
Phillips, Ethel May	<i>ab</i>	<i>W. Somerville</i>	1088 Broadway
Preston, Mertie Belle	<i>ab</i>	<i>Somerville</i>	51 Jacques St.
Richardson, Harry Elmer	<i>ce</i>	<i>East Aurora, N. Y.</i>	West Hall, 23
Richardson, Harry Herbert	<i>ab</i>	<i>Cambridge</i>	230 Prospect St.
Roberts, Harriet Norma	<i>ab</i>	<i>Medford Hillside</i>	35 Emery St.
Russell, Clara Rebecca	<i>ab</i>	<i>Winchester</i>	182 Cambridge St.
Sander, Eleonore Henriette Thekla	<i>ab</i>	<i>Cambridge</i>	117 Holworthy St.
Sanders, Annie Louisa	<i>ab</i>	<i>Wayland</i>	Start House, 4
Saunders, Ernest Alexander	<i>ce</i>	<i>Somerville</i>	16 Summer St.
Scoboria, Clarence Preston	<i>ab</i>	<i>Somerville</i>	23 Veazie St.
Spaulding, Rachel Josephine	<i>ab</i>	<i>Jaffrey, N. H.</i>	Metcalf Hall, A
Standish, Clara May	<i>ph</i>	<i>Segreganset</i>	10 Lee St.
Stearns, Lillian Josephine	<i>ab</i>	<i>W. Somerville</i>	399 Highland Ave.
Stowell, Ralph Gilman	<i>ce</i>	<i>Lynnfield</i>	A T Ω House
Teague, Donald Spencer	<i>ab</i>	<i>Caribou, Me.</i>	East Hall, 19
Tenney, Ruth	<i>ab</i>	<i>Auburn, Me.</i>	Metcalf Hall, 2
Titcomb, Grace	<i>ab</i>	<i>Farmington, Me.</i>	7 Francesca Ave.
Tufts, Florence Augusta	<i>ab</i>	<i>Malden</i>	38 Clifton St.
Walker, Florence Helen	<i>ab</i>	<i>W. Somerville</i>	26 Wallace St.
Watkins, Clarence Elmore	<i>ab</i>	<i>S. Manchester, Conn.</i>	Δ T House
Wood, Edward Holton	<i>ce</i>	<i>Saco, Me.</i>	East Hall, 5

Sophomore Class

Armstrong, Elias Benjamin	<i>ph</i>	<i>Waltham</i>	Dean Hall, 9
Atsatt, John Thornton	<i>ab</i>	<i>Mattapoisett</i>	West Hall, 6
Bailey, Vesta Louise	<i>ab</i>	<i>W. Somerville</i>	50R College Ave.
Bean, William Wendell	<i>ee</i>	<i>W. Medford</i>	34 Canal St.
Bidwell, George Leslie	<i>ch</i>	<i>Jamaica Plain</i>	East Hall, 14
Bodge, Harold Heath	<i>ee</i>	<i>Westbrook, Me.</i>	West Hall, 30
Bowker, Ella Wallace	<i>ab</i>	<i>Somerville</i>	2 Hillside Ave.
Burnham, Fred Walker	<i>ab</i>	<i>Williamstown, Vt.</i>	East Hall, 12
Calderwood, Mellen Greeley	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 26
Chevalier, Louis	<i>ee</i>	<i>Naugatuck, Conn.</i>	28 Professors Row
Chase, Alfred Whitman	<i>ee</i>	<i>Cambridge</i>	1667 Cambridge St.
Clark, Alvar Warren	<i>ab</i>	<i>W. Somerville</i>	167 College Ave.
Claus, Henry Turner	<i>ab</i>	<i>Saugus</i>	West Hall, 4
Cobb, Ernest	<i>ph</i>	<i>Allston</i>	East Hall, 14
Collins, Ida Lillian	<i>ab</i>	<i>Everett</i>	29 Franklin St.
Comstock, Bertha Louise	<i>ab</i>	<i>West Medford</i>	
Crockett, Ernest Dana	<i>me</i>	<i>Dexter, Me.</i>	Δ T House
Dodge, Waldo Edgar	<i>me</i>	<i>Hyde Park</i>	East Hall, 20
Dods, Francis Alexander	<i>ee</i>	<i>Somerville</i>	24 Partridge Ave.
Doherty, Frederick Joseph Howard	<i>ee</i>	<i>Boston</i>	West Hall, 11
Douglas, Jerome Harvey	<i>ee</i>	<i>Hull</i>	West Hall, 22
Dow, Roy Gay	<i>ee</i>	<i>Bridgton, Me.</i>	
Dunham, Tom Denny	<i>ch</i>	<i>Barre, Vt.</i>	East Hall, 8
Ewell, Walter Warren	<i>ee</i>	<i>Medford</i>	236 Salem St.
Fairbank, Myra Lillian	<i>ab</i>	<i>Cambridge</i>	32 Shepard St.
Farnum, Carrie Alice	<i>ab</i>	<i>Marlboro</i>	Metcalf Hall, 11
Farrar, Edward Leslie	<i>ee</i>	<i>Assinippi</i>	East Hall, 24
Fisher, William Ernest	<i>ee</i>	<i>W. Somerville</i>	26 Hancock St.
Ford, Herman Flagg	<i>ee</i>	<i>Danville, Me.</i>	West Hall, 31
Galarneau, Dennis Camille Amedee	<i>ab</i>	<i>Springfield</i>	West Hall, 10
Gammon, Robert Clair	<i>me</i>	<i>Lynn</i>	East Hall, 15
Garton, Florence Harriet	<i>ab</i>	<i>W. Somerville</i>	113 College Ave.
Gay, George Willard, Jr.	<i>sc</i>	<i>Norwood</i>	West Hall, 12
Gifford, Cora Louise	<i>ph</i>	<i>Woods Hole</i>	Metcalf Hall, C
Glenton, Frederico, Jr.	<i>ee</i>	<i>Nashua, N. H.</i>	Z Ψ House
Gordon, Harold Loring	<i>me</i>	<i>Auburndale</i>	Δ T House
Greene, Harry Marlon	<i>ab</i>	<i>Haverhill</i>	West Hall, 24
Guild, Emily Elizabeth	<i>ab</i>	<i>Brattleboro, Vt.</i>	Start House, 2
Harrington, Charles Ernest	<i>me</i>	<i>Lynn</i>	East Hall, 20
Holt, Roland Gordon	<i>mp</i>	<i>Hudson</i>	Δ T Δ House
Hunt, Murray Harding	<i>ch</i>	<i>Worcester</i>	West Hall, 16
Jenks, Daniel Ashley	<i>ab</i>	<i>Holyoke</i>	Dean Hall, 9
Loring, Seth Arthur	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 15

Lovejoy, Arthur Waldo	<i>ab</i>	<i>Lowell</i>	West Hall, 27
Marshall, John	<i>ee</i>	<i>New Salem</i>	East Hall, 1
Marshall, Wilnah Virginia	<i>ph</i>	<i>New Salem</i>	Allen House
McCoy, Florence Lillian	<i>ab</i>	<i>Somerville</i>	62 Main St.
Merrill, Charles Frank	<i>me</i>	<i>Somerville</i>	47 Fairmount Ave.
Milner, John George	<i>ee</i>	<i>Somerville</i>	East Hall, 29
Munroe, Carrie Josephine	<i>ab</i>	<i>Somerville</i>	70 Myrtle St.
Nason, Ralph Morgan	<i>ee</i>	<i>Orange</i>	West Hall, 22
Parks, Ralph Silas	<i>ab</i>	<i>Hudson</i>	East Hall, 14
Perry, Luther Packard	<i>ee</i>	<i>Shelburne Falls</i>	East Hall, 2
Pierce, Chester Earle	<i>ab</i>	<i>Rochester, Vt.</i>	West Hall, 24
Powers, Lorin Charles	<i>ab</i>	<i>Washington, D. C.</i>	West Hall, 28
Sanders, Amalie Cecilia Dorothea	<i>ab</i>	<i>Cambridge</i>	469 Broadway
Seery, Francis Joseph	<i>ce</i>	<i>Waterbury, Conn.</i>	East Hall, 27
Shaw, Frank Lester	<i>ab</i>	<i>Augusta, Me.</i>	
Shearer, Gordon Grant	<i>ee</i>	<i>Somerville</i>	33 Belmont St.
Smith, Floyd Elliott	<i>ee</i>	<i>Brattleboro, Vt.</i>	West Hall, 17½
Speirs, Ernest L.	<i>ee</i>	<i>Westbrook, Me.</i>	West Hall, 9
Swansey, Katherine Josephine	<i>ab</i>	<i>Somerville</i>	102 Prospect St.
Sweetser, Sidney Pulsifer	<i>ab</i>	<i>Philadelphia, Pa.</i>	West Hall, 21
Symmes, Gertrude Locke	<i>ab</i>	<i>Winchester</i>	77 Main St.
Taylor, Chester Emerson	<i>me</i>	<i>Clinton</i>	Δ T House
Taylor, Mabelle Woodbury	<i>ab</i>	<i>Hudson</i>	Start House, 6
Temple, Charles Hosea	<i>ab</i>	<i>Hinsdale, N. H.</i>	West Hall, 17
Thompson, Ina Gertrude	<i>ab</i>	<i>Somerville</i>	202 School St.
Tompson, George Morris	<i>ce</i>	<i>Wakefield</i>	
Turner, Isabel Lowe	<i>ab</i>	<i>Bath, Me.</i>	Start House, 7
Viles, Blynn Fred	<i>ce</i>	<i>Medford</i>	81 Main St.
Warner, George Loring	<i>ab</i>	<i>Palmer</i>	West Hall, 32
Watkins, Lura Clarinda	<i>ab</i>	<i>So. Manchester, Ct.</i>	Metcalf Hall, C
Wellman, Hugh Horace	<i>ce</i>	<i>Westminster West, Vt.</i>	East Hall, 8
Wheeler, Grace Inez	<i>ab</i>	<i>Milan, N. H.</i>	Start House 6
Whitehouse, Wendell Lewis	<i>ch e</i>	<i>Somerville</i>	74 Jenny Lind Ave.
Whitney, Howard Rogers	<i>ce</i>	<i>Somerville</i>	107 Sycamore St.
Williams, Arthur	<i>ab</i>	<i>Charlestown</i>	1 Prospect St.
Wilson, Harry Percival	<i>ce</i>	<i>Worcester</i>	West Hall, 11
Wise, William Mason	<i>ab</i>	<i>West Newton</i>	West Hall, 27
Witham, Ernest Clair	<i>sc</i>	<i>Cumberland Mills, Me.</i>	East Hall, 25
Wood, Roy Eugene	<i>ce</i>	<i>Saco, Me.</i>	West Hall, 3
Woodbury, Charles Harlow	<i>ab</i>	<i>Auburn, Me.</i>	West Hall, 32
Woodward, Frank Coy	<i>ce</i>	<i>East Pepperell</i>	West Hall, 7
Works, Austin Melvin	<i>ab</i>	<i>Somerville</i>	214 Medford St.

Freshman Class

Abbe, Arthur James	<i>ab</i>	<i>Springfield</i>	119 Adams St., Med.
Abbott, John Blackler	<i>ch</i>	<i>E. Bethel, Vt.</i>	East Hall, 1
Ames, Harvey Libby	<i>e</i>	<i>Somerville</i>	120 Perkins St.
Backus, John Alexander	<i>e</i>	<i>Somerville</i>	26 Kidder Ave.
Boardman, Seth Howard	<i>e</i>	<i>Georgetown</i>	East Hall, 26
Bryan, Harold John	<i>e</i>	<i>Medford Hillside</i>	1 Horton Ave.
Buckley, James Robert	<i>ab</i>	<i>No. Grosvenordale, Ct.</i>	72 Curtis St.
Buxton, Sara Lucy	<i>ab</i>	<i>Somerville</i>	286 Highland Ave.
Byrnes, Edward Francis	<i>ab</i>	<i>Waterbury, Ct.</i>	Dean Hall, 8
Cannell, Wirt Virgin	<i>ce</i>	<i>Bridgton, Me.</i>	Dean Hall, 8
Chandler, Eva Lillian	<i>ab</i>	<i>Barton Landing, Vt.</i>	Metcalf Hall 7
Chapin, Charles Mathews	<i>ab</i>	<i>Rockland, Me.</i>	East Hall, 25
Chapin, Harry Garfield	<i>e</i>	<i>Lawrence</i>	East Hall, 32
Cheney, Genevieve Henrietta	<i>ab</i>	<i>Delevan, N. Y.</i>	Metcalf Hall, 6
Clapp, Chester Blinn	<i>ab</i>	<i>Devereux</i>	
Clement, Fannie May	<i>ab</i>	<i>Everett</i>	4 Dean St.
Coupal, James Francis	<i>sc</i>	<i>Everett</i>	35 Wellington Ave.
Cousins, Clarence Edwin	<i>ab</i>	<i>Salem</i>	East Hall, 13
Crowell, Freeman Shedd	<i>e</i>	<i>Lowell</i>	East Hall, 16
Currier, Rudolph Winfield	<i>ab</i>	<i>Lynn</i>	East Hall, 13
Currier, Warren Mortimer	<i>e</i>	<i>Winchester</i>	Dean Hall, 10
Cutler, Leon George	<i>e</i>	<i>No. Montpelier, Vt.</i>	West Hall, 13
Dix, Leon Edward	<i>e</i>	<i>Hartford, Conn.</i>	East Hall, 33
Doherty, Philip Joseph	<i>ab</i>	<i>Charlestown</i>	22 Chestnut St.
Dole, Henry Haile	<i>e</i>	<i>Arlington</i>	361 Massachusetts Ave.
Dustin, Maurice Nathaniel	<i>e</i>	<i>Dexter, Me.</i>	East Hall, 31
Edwards, Alice Hayward	<i>ab</i>	<i>W. Somerville</i>	42 Packard Ave.
Ellis, Herbert Cram	<i>e</i>	<i>Detroit, Mich.</i>	East Hall, 10
Farnsworth, Dana Tufts	<i>ab</i>	<i>Taunton</i>	East Hall, 7
Fogg, Ralph Justin	<i>e</i>	<i>Lynn</i>	East Hall, 13
Foss, Fred Gilman	<i>e</i>	<i>North Andover</i>	East Hall, 9
Gale, David Carroll	<i>e</i>	<i>East Dedham</i>	West Hall, 13
Golden, Abram Culver	<i>ph</i>	<i>Dorchester</i>	50 Lawrence Ave.
Grant, Edward Leslie	<i>ab</i>	<i>Franklin</i>	A T O House
Graves, Otho McCarroll	<i>e</i>	<i>Willimantic, Conn.</i>	West Hall, 29
Gudge, Benjamin Joseph	<i>e</i>	<i>White City, Kan.</i>	Dean Hall, 2
Hall, Alfred Vargrave	<i>ab</i>	<i>Peru, Me.</i>	East Hall, 7
Hanscom, Henry Blake	<i>ab</i>	<i>Leeds Junction, Me.</i>	West Hall, 9
Haskell, Harold Clifford	<i>ab</i>	<i>Rockland, Me.</i>	Dean Hall, 12
Hayes, Chester Adams, Jr.	<i>e</i>	<i>No. Berwick, Me.</i>	East Hall, 5
Hayes, Will Francis	<i>mp</i>	<i>Georgetown</i>	East Hall, 26
Heald, Bertha May	<i>ab</i>	<i>Woburn</i>	Burlington St.
Holden, Joseph William	<i>e</i>	<i>Meriden, Conn.</i>	East Hall, 34

Hoxie, Harold Shepard	<i>e</i>	<i>No. Fairfield, Me.</i>	
Hunt, Guy Horton	<i>e</i>	<i>Somerville</i>	<i>48 Jacques St.</i>
Inglis, Henry Baxter	<i>e</i>	<i>Detroit, Mich</i>	East Hall, 10
Jackson, Mabel Estella	<i>ab</i>	<i>Lexington</i>	Start House, 1
Jackson, Minnie Wallis	<i>ab</i>	<i>Medford</i>	<i>47 Fulton St.</i>
Johnson, Phebe Chandler	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 14
Judkins, Agnes Frances	<i>ab</i>	<i>Merrimac</i>	Metcalf Hall, 6
Knight, Herbert Carr	<i>ee</i>	<i>Woodfords, Me.</i>	West Hall, 30
Knowlton, Edward Allen	<i>ab</i>	<i>New Bedford</i>	West Hall, 25
Lamb, Norval Edmund	<i>e</i>	<i>Attleboro</i>	West Hall, 12
Lendall, Harry Nelson	<i>e</i>	<i>Lynn</i>	West Hall, 29
Maas, Louis Olaf	<i>ee</i>	<i>Jamaica Plain</i>	West Hall, 28
Mackenzie, Fred Ross	<i>ab</i>	<i>Cliftondale</i>	West Hall, 4
Mann, Bertha Hill	<i>ab</i>	<i>Norway, Me.</i>	86 Mt. Vernon St. Somerville
Marshall, Dudley Blanchard	<i>e</i>	<i>Tufts College</i>	48 Professors Row
McGourty, John Farrell	<i>e</i>	<i>Boston</i>	<i>22 Francis St.</i>
Metcalf, Ernest George	<i>ab</i>	<i>Brooklyn, N. Y.</i>	East Hall, 23
Merrill, Carl Jewett	<i>e</i>	<i>Somerville</i>	<i>339 Summer St.</i>
Michael, Herbert Ledlie	<i>ab</i>	<i>Kingston, N. Y.</i>	West Hall, 25
Miller, George Stewart	<i>ab</i>	<i>No. Andover</i>	East Hall, 17
Morris, James Joseph	<i>e</i>	<i>Lowell</i>	East Hall, 16
Mullen, John Joseph	<i>e</i>	<i>Wellesley</i>	East Hall, 6
Nash, Curtis Whithed	<i>ab</i>	<i>Winchester</i>	
Noyes, Marion Temple	<i>ab</i>	<i>W. Somerville</i>	<i>15 Park Ave.</i>
Nye, Laila Campbell	<i>ab</i>	<i>W. Somerville</i>	<i>33 Electric Ave.</i>
Page, Arthur Smith	<i>e</i>	<i>Everett</i>	<i>36 Dean St.</i>
Paine, Alice Peabody	<i>ab</i>	<i>Groveland</i>	Start House, 1
Phillips, Leslie Blaine	<i>e</i>	<i>W. Somerville</i>	<i>1088 Broadway</i>
Priest, Alice Eaton	<i>ab</i>	<i>Canton, N. Y.</i>	Start House, 3
Quinlan, Edward Jerome	<i>ab</i>	<i>Meriden, Conn.</i>	East Hall, 34
Ringdahl, Frederick Wilhelm	<i>ab</i>	<i>Portland, Me.</i>	West Hall, 16
Riordan, Alice Cashman	<i>ab</i>	<i>Rockland</i>	Start House
Roberts, Charles Fred	<i>e</i>	<i>Caribou, Me.</i>	East Hall, 33
Saunders, Louise Melbourne	<i>ab</i>	<i>Somerville, 24 Powder House Terrace</i>	
Sibley, Ruth Annie	<i>ab</i>	<i>Spencer</i>	Metcalf Hall, 14
Smith, Richard Curtis	<i>e</i>	<i>Medford</i>	<i>42 Dudley St.</i>
Steele, Martha Taylor	<i>ab</i>	<i>Stoughton</i>	
Steinberg, Henry Joseph	<i>ab</i>	<i>Webster</i>	62 Quincy St.
Swenson, Henry	<i>ce</i>	<i>Karlshamn, Sweden</i>	
Tewksbury, Ella May	<i>ab</i>	<i>Lexington</i>	<i>Bedford St.</i>
Tripp, Angie May	<i>ab</i>	<i>Woburn</i>	<i>2 Eastern Ave.</i>
Vickery, Reina Gladys	<i>ab</i>	<i>Medford Hillside</i>	<i>Edison Ave.</i>
White, George Ritch	<i>e</i>	<i>Danbury, Conn.</i>	East Hall, 9

Whitman, Clara Hattie	<i>ab Fishers Island, N. Y.</i>	Allen House
Whitman, Hugh Redway	<i>ab Fishers Island, N. Y.</i>	West Hall, 31
Winslow, Geoffrey	<i>c New Bedford</i>	West Hall, 23
York, Fred Carl	<i>c Newmarket, N. H.</i>	East Hall, 21
Estabrooks, Louis Bancroft	<i>Wollaston</i>	West Hall, 26
Small, Florence E.	<i>ab So. Portland, Me.</i>	Start House, 5

Special Students

Aldrich, Bertha Alice II. <i>Music</i>	<i>No. Cambridge</i>	<i>27 Blake St.</i>
Annable, Anna Gertrude I. <i>Biology</i>	<i>West Somerville</i>	<i>101 Elm St.</i>
Bolles, Margaret Chapman II. <i>French</i>	<i>W. Somerville</i>	<i>184 College Ave.</i>
Brown, Dorothy Margaret Temple I. <i>English and Biology</i>	<i>Winchester</i>	
Brown, Walter Campbell IV. <i>Engineering</i>	<i>Castine, Me.</i>	<i>Δ T House</i>
Crabtree, Arthur Howard I. <i>Surveying</i>	<i>Somerville</i>	<i>112 Jenny Lind Ave.</i>
Crocker, Elizabeth Childs I. <i>Modern Languages</i>	<i>W. Somerville</i>	<i>42 Curtis St.</i>
Eames, Louise Bradley I. <i>Modern Languages and Music</i>	<i>Reading</i>	<i>Metcalf Hall, 15</i>
Hayden, Eleanore Soule II. <i>Music</i>	<i>W. Somerville</i>	<i>20 Day St</i>
Hazeltine, Clyda Blanche II. <i>Modern Languages</i>	<i>W. Somerville</i>	<i>20 Day St.</i>
Imai, Tame I. <i>English</i>	<i>Tokio, Japan</i>	<i>Metcalf Hall, 7</i>
Jackson, Gertrude Ada IV. <i>Modern Languages</i>	<i>Medford</i>	<i>86 Otis St.</i>
Kidder, Martin Lattimer III. <i>Engineering</i>	<i>Rochester, Vt.</i>	<i>West Hall, 23</i>
Park, Florence Colburn II. <i>Music</i>	<i>Winchester</i>	<i>12 Norwood St.</i>
Prince, Percy Sylvester I. <i>English</i>	<i>Salem</i>	<i>East Hall, 29</i>
Sheldon, Charles Talbot III. <i>Engineering</i>	<i>No. Billerica</i>	
Stone, Charles Henry I. <i>Science</i>	<i>Barre, Vt.</i>	<i>10 Emery St.</i>
Toy, Harvey Marshall II. <i>History</i>	<i>San Francisco, Cal.</i>	<i>West Hall, 17</i>

Divinity School

Graduate Students

Paige, John Merrill, B.D.	<i>Medford Hillside</i>	<i>77 Adams St.</i>
Satoh, Kiyoshi, B.D.	<i>Tokio, Japan</i>	Paige Hall, 22

Fourth Year

Andrews, Charles Masson	<i>Newtonville</i>	Paige Hall, 18
B.S., 1900		
Gale, Frank Randall	<i>Berlin</i>	
A.B., 1897		
Maxwell, Alfred Roscoe	<i>Moore's Mills, N. B.</i>	
	122 Summer St., Medford	

Second Year

Emmons, Charles Henry	<i>Bridgeport, Conn.</i>	Paige Hall, 6
Hadley, Rubens Rey	<i>Sterling</i>	Paige Hall, 13
Howes, George Henry	<i>Lowell</i>	Paige Hall, 7
Lewis, George Hallam	<i>Meriden, Conn.</i>	Paige Hall, 31
Miller, George Arthur	<i>N. Attleboro</i>	Paige Hall, 30

First Year

Angel, Frank James	<i>East Aurora, N. Y.</i>	Paige Hall, 36
Gay, George Augustus	<i>Meriden, Conn.</i>	Paige Hall, 19
Gilbert, Russ Hayden	<i>Hingham</i>	
Hillstren, Charles H.	<i>Bismark, N. D.</i>	Paige Hall, 5
Parkhurst, Henry Adams	<i>Dunstable</i>	Paige Hall, 25
Raspe, Otto	<i>Baltimore, Md.</i>	Paige Hall, 34
Willis, Sidney Joel	<i>West Concord, Vt.</i>	Paige Hall, 24

Bromfield-Pearson School

Burrage, Alvah Lowell	<i>Lowell</i>	East Hall, 18
Crawford, Hugh Wadsworth	<i>Webster</i>	53 Belvidere St., Boston
Doherty, Daniel Francis	<i>New Dorchester</i>	61 Bernard St.
Hadley, Norris Edmund	<i>Somerville</i>	35 Conwell Ave.
Jones, John Paul	<i>Woburn</i>	662 Main St.
Malone, Thomas Joseph	<i>Charlestown</i>	12 Chapman St.
Proctor, Fred Willis	<i>Wilton, N. H.</i>	East Hall, 6
Sanborn, John Freeman	<i>New Market, N. H.</i>	East Hall, 21
Smead, Alfred Felton	<i>Greenfield</i>	Dean Hall, 10
Snow, Paul Revere	<i>Somerville</i>	74 Jenny Lind Ave.
Wilder, Frederick Gilson	<i>Arlington</i>	7 Chapman St.

Medical School

Fourth Year

Averell, Charles Wilson, A.M. (Colby)	Waltham
Baker, Ida Belle	New Boston, N. H.
Barrett, George Washington	Buffalo, N. Y.
Buck, Charles Edward, Ph.G. (Phila. Coll. Phar.)	Westminster, Vt.
Butterfield, George Kittredge	Reeds Ferry, N. H.
Caswell, Bertram Horace	Wilmington
Clarke, Inez Louise, A.B. (Radcliffe)	Cambridge
Conway, Francis Bernard	Cambridge
Cotter, Maurice Edward	Lawrence
Croswell, Mary Sibylla, A.B. (Colby)	Farmington Falls, Me.
Daly, Jeremiah James	Andover
Derrick, George William	Cambridgeport
Downing, Charles Harland	Portsmouth, N. H.
Dubois, Eoline B. C.	Cranston, R. I.
Fleming, Patrick Joseph	Cambridge
Halsall, Mary Elizabeth	E. Boston
Haskins, Frank Eugene, Ph.G. (Mass. Coll. Phar.)	Brattleboro, Vt.
Jacobs, Charles Michael	Somerville
Joyce, James Henry	Salem
Keeler, William Basil	Boston
Kerr, Isabella Dickieson,	Medford
Langworthy, Henry Glover	Dubuque, Iowa
Mahoney, Francis Aloysius	Chelsea
Medlar, Faith Curtis	Boston
McElroy, Frank Henry	Providence, R. I.
McNeil, Edmund Johnson, Jr.	Cambridge
Michael, Helen Abbott	Boston
Mitchell, Ethel Susanna	Plymouth, N. H.
Murphy, Edward Martin	Lowell
O'Brien, Loretta Joy	Chelsea
Parr, John	Lawrence
Reis, Frederick	Boston
Rice, Florence Frances	Boston
Ripley, William Littlefield	Newton
Rose, William Milton	Cambridge
Sheehan, William Joseph	S. Boston
Stickney, Elizabeth Mary	Dorchester
Sullivan, Frank Aloysius	St. Stephens, N. B.

Swan, Horace Cheney	<i>Boston</i>
Topaz, Anna	<i>Boston</i>
Turner, James Henry	<i>Salem</i>
Wernick, Benzoin G.	<i>Boston</i>
Wheatley, Louis Frederick	<i>Meriden, Conn.</i>
Whittle, John Augustus	<i>Wakefield</i>

Third Year

Ameno, Joseph Louis	<i>Boston</i>
Anderson, John Hammond	<i>Quincy</i>
Bennett, William Henry	<i>Roxbury</i>
Biron, Wilfred Louis	<i>Manchester, N. H.</i>
Brady, Frank Robert	<i>Lowell</i>
Buckley, Daniel Joseph	<i>Arlington</i>
Buchold, Fred George	<i>Lawrence</i>
Carley, Margaret	<i>Boston</i>
Ceconi, John Aloysius	<i>Dorchester</i>
Chase, Lawrence Milton	<i>W. Duxbury</i>
Chase, James Smalley	<i>Duxbury</i>
Corey, Frederick Hall	<i>Roxbury</i>
Cyr, Emile Edward	<i>Lawrence</i>
Dailey, Edward Joseph	<i>Somerville</i>
Dearborn, Luther Gould, Jr., A.B.	<i>Somerville</i>
Derby, Fred William	<i>Arlington</i>
Ferguson, Creighton	<i>Cambridge</i>
Foster, Maude Ashley	<i>Melrose</i>
Gettings, Thomas Lawrence	<i>Fall River</i>
Harrington, Robert Brine	<i>Somerville</i>
Harrison, Henry	<i>Ware</i>
Holt, Lucinda Mary-Belle, B.L. (Smith)	<i>Portland, Me.</i>
Horne, Lester Wallace	<i>Norway, Me.</i>
Janes, Arthur Percy	<i>Boston</i>
Kelly, John Joseph	<i>Dorchester</i>
Kendall, George Ralph	<i>Boston</i>
Kenney, Walter Clement	<i>Sharon, Vt.</i>
Lawton, William Francis	<i>Charleston, So. Carolina</i>
Levins, Nathan Noah	<i>Boston</i>
Mayrand, Eugene	<i>Lowell</i>
McGurn, William J.	<i>Bridgewater</i>
Monahan, John Ambrose	<i>Clinton</i>
Murphy, Charles Augustus	<i>Boston</i>
Murphy, Thomas William	<i>Lawrence</i>
Myles, Leo Thomas	<i>Cambridge</i>
Neuman, Leon	<i>Boston</i>

Newton, William Henry	<i>Waltham</i>
Paull, Chester Alpheus	<i>Hollis, N. H.</i>
Pease, Charles Valentine	<i>Boston</i>
Pofcher, Elias Harry	<i>Everett</i>
Reilly, Thomas	<i>Brockton</i>
Robinson, Philip Eaton	<i>Medford</i>
Robison, J. Collier	<i>Fillmore, Utah</i>
Scanlan, Thomas John	<i>Boston</i>
Schmidt, Richard Diedrich	<i>Boston</i>
Seymour, Horace Darling	<i>Warren, R. I.</i>
Shaw, Matthew Albert Neil	<i>Boston</i>
Shay, Charles Edwin	<i>Roxbury</i>
Smith, William Morgan	<i>Jamaica Plain</i>
Stockbridge, Albert Horatio	<i>Lynn</i>
Stoodley, Harry Marr	<i>Somerville</i>
Sullivan, Cornelius Augustine	<i>Everett</i>
Tower, Freeman Augustus	<i>Sterling Junction</i>
Walsh, Joseph	<i>Augusta, Me.</i>
Walsh, Joseph Francis	<i>Lawrence</i>
Wallace, Annie Marie	<i>West Gore, N. S.</i>
Warren, Lizzie Maude	<i>New Boston, N. H.</i>
Van Wieren, Jean Kerr	<i>Boston</i>
Woodill, Edith Esty	<i>Dorchester</i>

Second Year

Abbott, Harry Daniel	<i>Lynn</i>
Bigelow, Alice Houghton, A.B. (Boston Univ.)	<i>Boston</i>
Blanchard, Stanley Wayne	<i>Montpelier, Vt.</i>
Boardman, Charles Augustus	<i>Boston</i>
Bogan, Frederic Leon	<i>Boston</i>
Brassil, Timothy Francis	<i>Cambridge</i>
Brearton, Edward John	<i>South Boston</i>
Breen, James Henry	<i>Hudson</i>
Brown, Edison William	<i>Boston</i>
Caldwell, Joseph Davis	<i>Waltham</i>
Cregg, Francis Aloysius	<i>Lawrence</i>
Carvill, Lizzie Maud	<i>Somerville</i>
Choate, Alton Jay	<i>Salem</i>
Clark, Harry William	<i>Woburn</i>
Clay, Waldo Hoit	<i>Laconia, N. H.</i>
Conwell, Walter Livingstone, Jr.	<i>Boston</i>
Cotter, Edward Joseph	<i>Roxbury</i>
Cox, Ann Caroline	<i>Boston</i>
Cummings, John Francis	<i>Brockton</i>

Curry, Ernest Francis	<i>Melrose</i>
Curtis, Alton Kallock	<i>Boston</i>
Cutts, Alice May McDow	<i>Cambridge</i>
Derrick, Joseph Stephen	<i>Charlestown</i>
Dunham, Adeline Francis	<i>Boston</i>
Dutcher, William Austin	<i>Boston</i>
Dwyer, William Joseph	<i>Cambridge</i>
Eastman, George Warren	<i>E. Corinth, Me.</i>
Eddy, Merritt Otis	<i>Townshend, Vt.</i>
Fiske, Willard Orville	<i>Lawrence</i>
Fiske, Rebecca Cutter	<i>Grafton</i>
Galbraith, Anna Veitch	<i>Victoria, Canada</i>
Gately, Mary Agatha Murray	<i>Boston</i>
Gile, Frank Herbert, Jr.	<i>Melrose</i>
Gookin, Edward Richard	<i>Boston</i>
Goddu, Louis Adolore Oliver, Ph.G. (Mass. Coll. Phar.)	<i>Winchester</i>
Hammond, Harry Weymouth	<i>Chocomo, N. Y.</i>
Hardwick, Sydney Curtis	<i>Quincy</i>
Henry, Thomas Francis	<i>Salem</i>
Higgins, George Vincent	<i>N. Abington</i>
Hinchliffe, Frederick	<i>Waltham</i>
Houghton, Richard Henry	<i>Boston</i>
Hussey, William Francis	<i>Boston</i>
Kendrick, Joseph Thomas	<i>Boston</i>
Kennison, Frederick Marshman	<i>Boston</i>
Kelley, John Michael	<i>Boston</i>
Kelly, Harvey Augustine	<i>Dorchester</i>
Kingsbury, Walter Warren	<i>Walpole, N. H.</i>
Landers, George Bagnell	<i>Chelsea</i>
Long, Merritt Allen	<i>Manchester</i>
Lynch, William	<i>Boston</i>
MacPhail, John Gunn	<i>Boston</i>
Medalia, Leon Sam Abrahams	<i>Palestine, Turkey</i>
Meehan, Patrick Joseph	<i>Lowell</i>
McCarthy, Eugene Justin	<i>Malden</i>
McCarthy, Francis Patrick	<i>Boston</i>
McGaffigan, Bernard Francis	<i>Charlestown</i>
McLaughlin, John David	<i>E. Boston</i>
Murphy, Frederick Vincent	<i>Brockton</i>
Murphy, Anna Frances	<i>Nashua, N. H.</i>
Nolan, James Patrick Augustine	<i>Boston</i>
Noyes, William Nelson	<i>Portsmouth, N. H.</i>
O'Brien, William Smith	<i>Marlboro</i>
Ordway, Mabel Dyer	<i>Boston</i>

Palmer, Louis James	<i>Boston</i>
Peters, Solon W.	<i>Sterling</i>
Peterson, Clark Kimball	<i>E. Boston</i>
Rand, Anna Ethel	<i>Worcester</i>
Reeves, William Arthur	<i>Lynn</i>
Richardson, Horace Kimball	<i>Medford</i>
Roach, Alfred John	<i>Lowell</i>
Rochford, Grace Elizabeth	<i>Wellesley</i>
Rogers, Frank Norwood	<i>Dedham</i>
Rowe, Carl Allen	<i>Franklin, N. H.</i>
Rushford, Edward Allan	<i>Salem</i>
Scannell, James Joseph	<i>Roxbury</i>
Sheehy, Richard William	<i>Weymouth Centre</i>
Sherman, George Ernest	<i>Cambridge</i>
Simon, Arthur Leslie	<i>Waltham</i>
Skinner, Ralph Douglas	<i>Jamaica Plain</i>
Smith, Myrtle	<i>Somerville</i>
Stacey, Winthrop Downing	<i>Charlestown</i>
Sundin, Axel Kassemir Hildebrand	<i>Providence, R. I.</i>
Taylor, Maude Winnifred	<i>Hartford, Conn.</i>
Thompson, Harold Fenton	<i>Boston</i>
Tinkham, Oliver Goldsmith	<i>Weymouth</i>
Tucker, Arthur Wallace	<i>Chelsea</i>
Tyson, Forrest Clark	<i>Tipton, Mich.</i>
Walker, William Dacre	<i>Peabody</i>
Warren, Thomas Francis	<i>Fall River</i>
Weeden, Allen Augustus	<i>Providence, R. I.</i>
Whelan, Charles, B.S. (Dartmouth)	<i>Weymouth</i>
Williams, David Lawrence	<i>Boston</i>
Wood, Albert John	<i>Allston</i>
Young, Charles Henry	<i>Woburn</i>
Zarratt, Josefa	<i>Boston</i>

First Year

Aldrich, George Herman	<i>Marlboro, N. H.</i>
Bagnall, Arthur Wallace	<i>Roslindale</i>
Baker, Myron Clarke	<i>Knoxville, Tenn.</i>
Barstow, Andrew Thaddeus	<i>E. Braintree</i>
Bates, Lewis Beals	<i>N. Weymouth</i>
Ballou, Ambrose Roche	<i>Quincy</i>
Bickford, Wallace Mellen	<i>Portland, Me.</i>
Blaisdell, Albert Chester	<i>N. Woburn</i>
Bradbury, Walter Lyman	<i>Boston</i>
Brown, William James	<i>Boston</i>

Brown, Louis Raymond	<i>Putnam, Conn.</i>
Brown, John Elliott	<i>Jamaica, B. W. I.</i>
Bruce, John Rufus	<i>E. Weymouth</i>
Burns, Richard Charles	<i>Lawrence</i>
Butler, John Dennison	<i>Liverpool, N. S.</i>
Cahill, Thomas Joseph	<i>Cambridge</i>
Callahan, John Francis	<i>Marlboro</i>
Campbell, William Marie	<i>Dorchester</i>
Candage, William Crosswell Doane	<i>Seal Harbor, Me.</i>
Carey, Frank Arthur	<i>Taunton</i>
Carley, Frederick James	<i>Tewksbury</i>
Carr, Gladys Lydia	<i>Chelsea</i>
Carr, Dennis Henry	<i>Dorchester</i>
Carroll, Arthur Everett	<i>Danvers</i>
Carroll, Joseph Arthur	<i>Dorchester</i>
Carter, Fred. Henry	<i>Charlestown</i>
Chalmers, Hattie Elizabeth	<i>Hudson</i>
Clune, Arthur J.	<i>Springfield</i>
Coburn, Clarence Orrin	<i>Manchester, N. H.</i>
Cogan, Henry James	<i>Hyde Park</i>
Cole, Ralph Waldo Emerson	<i>Franklin Falls, N. H.</i>
Connor, John Henry Francis	<i>Roxbury</i>
Cowan, Marion	<i>Lynn</i>
Coy, Lucien Wright, Jr.	<i>Little Rock, Ark.</i>
Crimmin, Philip Patrick	<i>Brockton</i>
Crowley, John Joseph	<i>Everett</i>
David, Oliver Joseph	<i>Lowell</i>
Davis, Ernest Leland	<i>Springfield</i>
Davis, Fred Norman	<i>Everett</i>
Day, Cushman	<i>Boston</i>
Deacon, Thomas Irving	<i>Cambridge</i>
Dennison, Lyman King	<i>Waterbury, Conn.</i>
Donahue, Francis Thomas	<i>N. Brookfield</i>
Doran, John Michael	<i>Charlestown</i>
Dougherty, William Joseph	<i>Manchester</i>
Doyle, Francis Michael	<i>Methuen</i>
Dudley, Oscar Albert	<i>Cochituate</i>
Eaton, Marland Hooper	<i>Beverly</i>
Fallon, George Patrick	<i>Clinton</i>
Fallon, Joseph Francis	<i>Brookline</i>
Fallon, Thomas Francis, Jr.	<i>Clinton, Mass.</i>
Felch, Lewis Perley	<i>Boston</i>
Fletcher, Arthur Stanton	<i>Waterville, Me.</i>
Fletcher, Christopher	<i>Chelsea</i>

Ford, Foster Studley	<i>N. Grafton</i>
Forsyth, James Perkins	<i>Philadelphia, Pa.</i>
Foss, Ralph Emery	<i>Peabody</i>
Foster, George Sanford	<i>Manchester, N. H.</i>
Gage, Arthur Tenney	<i>Winchester</i>
Gallagher, Charles James	<i>Roxbury</i>
George, Alvin	<i>Boston</i>
George, Arial Wellington	<i>Bristol, N. H.</i>
Gibson, George William	<i>Chicopee</i>
Glen, Cornelius Leonard	<i>Pawtucket, R. I.</i>
Glynn, William Clinton	<i>Clinton</i>
Goldberg, Elias	<i>Boston</i>
Grainger, Joseph Francis	<i>Cambridge</i>
Greenwood, Austin Ellsworth	<i>Lowell</i>
Hadley, Amos William	<i>Worcester</i>
Halman, William Joseph	<i>Somerville</i>
Ham, Helen Willard	<i>Middleboro</i>
Hamilton, Harry Levi	<i>Old Town, Me.</i>
Harmon, Ernest Linwood	<i>Biddeford, Me.</i>
Harrington, Clifton Ward	<i>Hathorne</i>
Harrison, Columbus William	<i>Boston</i>
Hennessey, William Warren	<i>Salem</i>
Hermann, Louis Alfred	<i>Boston</i>
Hill, Harry Joseph	<i>Boston</i>
Hill, Johnson Washington, B.D.	<i>Boston</i>
Hoey, Joseph Augustin	<i>E. Boston</i>
Holmes, George Winslow	<i>Belfast, Me.</i>
Hughes, Archibald William	<i>Providence, R. I.</i>
Hurley, Cornelius Thomas	<i>Boston</i>
Innes, Carrie Louise	<i>Boston</i>
Kapp, Juno Belle,	<i>Denver, Col.</i>
Kearney, Joseph Patrick	<i>Lowell</i>
Keenan, George Francis	<i>Boston</i>
Kelley, Edward Paul	<i>Woburn</i>
Kelly, Thomas Francis	<i>Cambridge</i>
Kirkpatrick, Gilbert Stanley	<i>Wilmington</i>
Klein, Isaac	<i>Boston</i>
Lacey, Henry Orlando	<i>Cambridge</i>
Lilley, John Franklin	<i>New Bedford</i>
Little, Charles Bingley	<i>Everett</i>
Looney, Edward Michael	<i>Salem</i>
Lougee, John Leroy	<i>Boston</i>
Luce, Leroy Alson	<i>Gayssville, Vt.</i>
Mahoney, Charles Frederick	<i>E. Boston</i>

Mahoney, Walter Francis	<i>Hudson</i>
Makller, Moses	<i>Boston</i>
Mara, Joseph Lawrence	<i>Boston</i>
Marlin, Anna Sarah	<i>Boston</i>
Marr, Ben Butler	<i>Sussex, N. B.</i>
McColgan, John Cornelieus	<i>E. Boston</i>
Mehan, Joseph Aloysius	<i>Lowell</i>
Monahan, John Terrence	<i>Hopkinton</i>
Moulton, Sam Russell	<i>Newton Highlands</i>
McCarthy, Lawrence John	<i>Vernon, Conn.</i>
McCarthy, Timothy William	<i>Vernon, Conn.</i>
McConville, Frederick Walter	<i>Boston, Mass.</i>
McCready, Leo Thomas	<i>Providence, R. I.</i>
McDonald, Louis Ronald	<i>Charlestown</i>
McDonell, George Joseph	<i>So. Boston</i>
MacGhee, Charles Maxwell	<i>Knoxville, Tenn.</i>
McMahon, Michael Francis E.	<i>Providence, R. I.</i>
MacNeil, Charles Seward Jadis	<i>Boston</i>
McVey, Frederick Joseph	<i>Dorchester</i>
Mintz, Samuel Charles	<i>Boston</i>
Morse, Irene May, A.M.	<i>Laramie, Wyoming</i>
Murphy, John Michael	<i>Monson</i>
Nickerson, Mary Abbie	<i>Cohasset</i>
Nolan, Henry Stuart	<i>Somerville</i>
Ober, Frank Roberts	<i>Northeast Harbor, Me.</i>
Phillips, Richard Hornorhas	<i>Boston</i>
Pitkin, Edith Winifred, B.A. (Wellesley)	<i>Albany, N. Y.</i>
Quinn, John Devereaux	<i>Worcester</i>
Raymond, Charles Stanley	<i>Providence, R. I.</i>
Regan, William Henry	<i>Boston</i>
Roughan, Charles Michael	<i>Collinsville</i>
Sanborn, Mary Esther	<i>Brookline</i>
Saunders, James Augustin	<i>Lowell</i>
Sawyer, Samuel Ellison	<i>Lewiston, Me.</i>
Segal, Jennie	<i>East Boston</i>
Shaw, John William	<i>Amesbury</i>
Spline, Robert Emmett	<i>Dorchester</i>
Stammers, Joseph Collins	<i>Charlestown</i>
Stevens, William Russell	<i>Marshfield</i>
Stone, William Livingstone	<i>Chelsea</i>
Sturnick, Frederick Michael	<i>Boston</i>
Suitor, Henry Albert	<i>Barton, Vt.</i>
Sweeney, Mary Agnes	<i>Nashua, N. H.</i>
Taylor, Roy Arnold	<i>Waltham</i>

Trottier, Arthur Ovilar	<i>Providence, R. I.</i>
Washburn, Chester Angus	<i>Everett</i>
Werner, Joseph Samuel	<i>Boston</i>
Wheaton, Horace Frank	<i>Cambridge</i>
Young, Evangeline Wilson	<i>Boston</i>
Whipple, Lewis A.	<i>Essex</i>
Whitney, Clifford Calvin	<i>Bridgton, Me.</i>
Wright, Francis Joseph	<i>Roxbury</i>
Wyman, George Ernest	<i>W. Somerville</i>

Special Students

Baker, Lily Owen	<i>Boston</i>
Bangs, Edwin Mayo	<i>Boston</i>
Bloomberg, Senior	<i>Boston</i>
Chandler, Clarence Luther	<i>Townsend</i>
Coffin, Harriet Frances	<i>E. Orange, N. J.</i>
Coulson, Richard	<i>Boston</i>
Currier, Richard Doe	<i>Boston</i>
Daly, John Augustine	<i>Andover</i>
Danforth, Harland Abbott	<i>Peabody</i>
Davis, John Henry, A.B., A.M.	<i>Georgetown</i>
DeSorgher, Louis Lee	<i>Boston</i>
Donovan, John Henry	<i>Lowell</i>
Garry, John Joseph	<i>Methuen</i>
Gorham, George Hartley	<i>Boston</i>
Hardwick, Frederick Veazie	<i>Quincy</i>
Hastings, Gertrude Wentworth, A.B. (Cornell)	<i>Winthrop</i>
Haviland, Walter Childs	<i>Holliston</i>
Hawkes, George W.	<i>Chelsea</i>
Hayes, Mary Agnes	<i>Boston</i>
Herring, William Mortimer	<i>N. Attleboro</i>
Irving, Harry	<i>Providence, R. I.</i>
Kapp, Julia Seaton, M. D.	<i>Denver, Col.</i>
Mason, Alton Erastus	<i>Dighton</i>
Montgomery, Mary Isabel	<i>Charlottetown, Canada</i>
Murphy, Frederick Paul	<i>Lowell</i>
Nichols, Franklin Stuart	<i>Worcester</i>
O'Brien, William Francis	<i>Pawtucket, R. I.</i>
Patterson, Alice Maud, M. D.	<i>Peabody</i>
Pierson, John Corbin	<i>Tufts College</i>
Pinner, Charles Francis	<i>Boston</i>
Plunkett, Harold Brabazon	<i>Lowell</i>
Regan, Frank Alfred	<i>Boston</i>
Sanborn, Warren Bigelow	<i>Augusta, Me.</i>

Tangney, Charles William	<i>Rockland</i>
Thurber, Stephen Francis	<i>Warren, R. I.</i>
Toohey, Thomas Victor	<i>Roxbury</i>
Turner, George William	<i>Fall River</i>
Welles, Franklin	<i>Boston</i>
Whitman, Luther Oakes	<i>St. Cloud, Minnesota</i>

Dental School

Senior Class.

Bence, Carrie Isabelle Hough	<i>Pawtucket, R. I.</i>
Bern, Philip Sigfried	<i>New York, N. Y.</i>
Bowles, Boyd Franklin	<i>Waterville, N. S.</i>
Cargill, William Lowell	<i>Liberty, Me.</i>
Carpenter, George William	<i>Rehoboth</i>
Cogger, Francis Albert	<i>Boston</i>
Cole, Charles Redman	<i>Pawtucket, R. I.</i>
Dixon, Joseph Reynolds	<i>Boston</i>
Doubleday, Arthur William	<i>Springfield</i>
Dow, William Snow	<i>Arlington</i>
Driffin, Harry Alexander	<i>Leominster</i>
Durgin, Oliver Kendall P.	<i>Saco, Me.</i>
Fall, Edward	<i>Newton</i>
Farquhar, Robert Jr.	<i>Gilbertville</i>
Farrington, Curtis William	<i>Boston</i>
Fraher, Michael Joseph	<i>So. Boston</i>
Grogan, Frederick Thomas	<i>W. Swanzey, N. H.</i>
Harris, Leslie Woodbury	<i>Natick</i>
Hatch, Theron Harrington	<i>Damariscotta, Me.</i>
Hough, Grace Maude	<i>Pawtucket, R. I.</i>
Jamieson, Robert Crawford	<i>Boston</i>
Kelley, Varney Albert	<i>Boston</i>
Lima, Anthony Jacome Travassos	<i>Azores</i>
Maguire, John Augustine	<i>Dorchester</i>
Mason, Walter Courtlandt	<i>Gaysville, Vt.</i>
McInnes, George Francis	<i>Boston</i>
Miles, Frank Bruce	<i>Up. Maugerville, N. B.</i>
O'Brien, James, Jr.	<i>Ashland</i>
Pendleton, Irving Erskine	<i>Searsport, Me.</i>
Pettengill, Clarence Albert, S.B.	<i>Hudson</i>
Quinn, Francis Xavier	<i>Worcester</i>

Sargent, Sidney Burt	<i>Searsport, Me.</i>
Shaw, George Maurice	<i>New York, N. Y.</i>
Shay, Joseph William	<i>Boston</i>
Shillington, James Henry	<i>Lynn</i>
Shooshan, Harry Manoog	<i>Boston</i>
Sproul, Frank Wells	<i>Bristol, Me.</i>
Staples, Odber Welsley	<i>St. John, Canada</i>
Thorburn, Howard Lester	<i>Boston</i>
Tobin, Edward William	<i>So. Boston.</i>
Wescott, Winfred Francis	<i>W. Medford</i>
Wightman, Morse	<i>Attleboro</i>
Wren, John Joseph	<i>Jamaica Plain</i>

Junior Class.

Allen, Harry Prescott	<i>Cambridge</i>
Ash, Henry	<i>No. Weymouth</i>
Askowith, Charles	<i>Roxbury</i>
Atwood, Ira Osmyn	<i>No. Attleboro</i>
Barron, Wilson Darling	<i>Dexter, Me.</i>
Breslin, John Lawrence	<i>Woburn</i>
Bodge, Frederick Garfield	<i>Tamworth, N. H.</i>
Bonney, Therese Eva	<i>Somerville</i>
Brigham, Ernest Phipps	<i>Westboro</i>
Brooks, Ernest Robbins	<i>Northfield, Vt.</i>
Brosnahan, James Leo	<i>Boston</i>
Brown, Charles Drew	<i>Somerville</i>
Bruce, Barnett	<i>Portland, Me.</i>
Bunker, Jane Graupner	<i>New York, N. Y.</i>
Butler, Charles Carter	<i>Pittsfield</i>
Centervall, Ivan A. T.	<i>Helsingborg, Sweden</i>
Chester, Carey Roscoe	<i>Malden</i>
Chisholm, Lester Dearborn	<i>Bridgewater</i>
Clarke, Charles Peter	<i>Ayer</i>
Collins, Stephen Bartholomew	<i>Avon</i>
Davis, Joseph Benjamin	<i>Bridgton, Me.</i>
Davis, Myrton Omer	<i>Worcester</i>
Dearing, Dana Emerson	<i>Randolph, Vt.</i>
Dooley, John Henry	<i>Boston</i>
Dowd, Thomas Patrick	<i>Natick</i>
Fenelon, James Joseph	<i>E. Boston</i>
Fowler, Miles Hartley	<i>Dorchester</i>
Francis, Melville F.	<i>Malden</i>
French, Frank Russell	<i>Brockton</i>
Gallagher, Charles Aloysius	<i>Roxbury</i>

Gibbons, John Joseph	<i>Clinton</i>
Gilday, Frank Joseph	<i>Everett</i>
Gilpatric, Edgar Frank	<i>Biddeford, Me.</i>
Gobie, William Allen	<i>Woodstock, Vt.</i>
Gokey, Harry Myers	<i>Northfield, Vt.</i>
Goodrich, Lynn Merton	<i>Oakland, Me.</i>
Gould, Arthur Richard	<i>Brockton</i>
Gowen, Charles Edwin	<i>Dover, N. H.</i>
Grant, Walter Henry	<i>Cambridge</i>
Griffin, John Joseph	<i>Waltham</i>
Harpin, Henry Taylor	<i>Windsor, Vt.</i>
Harrison, Henry Hersey	<i>So. Boston</i>
Hart, Frederick James	<i>Lowell</i>
Heckerman, John Nevin	<i>Bedford, Penn.</i>
Hennessy, Thomas, Jr.	<i>Roxbury</i>
Hill, Hugh Thomas	<i>Boston</i>
Hodgdon, Alby Emerson Paige	<i>E. Foxboro</i>
Jenkins, George Albert	<i>N. Weymouth</i>
Jewett, Elton Sumner	<i>Boston</i>
Johnson, Alfred Leo Roy	<i>Shelburne Falls</i>
Kennedy, John Joseph	<i>Chicopee</i>
Kiley, Robert Delury	<i>Salem</i>
King, Jeanette Emma	<i>Boston</i>
Lunt, Wilbur True	<i>Rochester, N. H.</i>
Luce, Maurice Garfield	<i>Haverhill</i>
Lanigan, Francis Jesse	<i>Calais, Me.</i>
Logwood, Burt Eugene	<i>Boston</i>
Mahoney, George Edward	<i>E. Boston</i>
Mahoney, James Francis	<i>Waltham</i>
McCarthy, Justin Lawrence	<i>Ashland</i>
McCarthy, William Francis	<i>Cambridge</i>
McGlew, Charles Kettlewell	<i>Salem</i>
McGourty, Frederick William	<i>Worcester</i>
MacKeon, John Francis	<i>Taunton</i>
MacKinnon, John Russell	<i>Dorchester</i>
Manster, James Siemel	<i>Roxbury</i>
Mignault, William Theodore	<i>Boston</i>
Moderno, Louis	<i>Cambridge</i>
Moran, Philip Frederick	<i>Somerville</i>
Moran, John James	<i>Woburn</i>
Mullin, David Joseph	<i>St. John, N. B.</i>
Osborne, Shelley Bancroft	<i>Uxbridge</i>
Perrault, Oscar Leon	<i>No. Brookfield</i>
Pike, Ezra Barker, Jr.	<i>Brentwood, N. H.</i>

Preston, Nathaniel Meservey	<i>New Hampton, N. H.</i>
Reardon, Joseph Edmund	<i>Cambridge</i>
Riley, John Joseph	<i>Rockland</i>
Rockett, Joseph Bernard	<i>Dorchester</i>
Romanow, Morris Theodore	<i>Boston</i>
Romanow, Morris	<i>W. Somerville</i>
Rounds, Daniel	<i>Saco, Me.</i>
Rund, Charles	<i>Boston</i>
Ryder, Joseph Michael	<i>So. Boston</i>
Seagrave, Chauncey Wilcox	<i>Uxbridge</i>
Shaughnessy, Emma Elizabeth	<i>Newtonville</i>
Smith, Harry Monford	<i>E. Boston</i>
Smith, Clarence Endicott	<i>Fredericton Jct., N.B.</i>
Stetson, Harry Morgan	<i>Cohasset</i>
Stegelman, Alfred Gatzor	<i>Lewiston, Me.</i>
Story, Ernest Sherman	<i>Salem</i>
Streijffert, Thure Gustaf	<i>Helsingborg, Sweden</i>
Thomas, Charles Arthur	<i>Somerville</i>
Thorburn, Stanley Burton	<i>Boston</i>
Ufford, Eugene Urbane	<i>Holyoke</i>
Wells, Ernest Leavitt	<i>Waltham</i>
Wheeler, George Gilman	<i>Providence, R. I.</i>
Whitehouse, Frank Harrison Gower	<i>Providence, R. I.</i>
Whittredge, Eugene Alfred	<i>Foxcroft, Me.</i>
Wilkinson, Alvin Thomas	<i>Providence, R. I.</i>
Young, John Maurice	<i>Rockland</i>

Freshmen

Barton, Allen Gordon	<i>Boston</i>
Blagdon, Joseph Michael	<i>Charlestown</i>
Brenan, Henry Edward	<i>Boston</i>
Carlson, Bertel Gustaf	<i>Worcester</i>
Caswell, Fred. Calvin	<i>Brockton</i>
Cole, Charles Cummings	<i>Boston</i>
Crawford, Arthur Archibald	<i>Cambridge</i>
Dickinson, George Granville Parker	<i>Harvard</i>
Doonan, Henry Edward	<i>Wellesley</i>
Donlan, Lawrence Edward	<i>Boston</i>
Dowd, Harry Irving	<i>New Britain, Conn.</i>
Dunleavy, John Eugene	<i>Uxbridge</i>
Fanning, Arthur Oscar	<i>Salem</i>
Finnegan, George Francis	<i>Waltham</i>
Fitzgerald, Francis Joseph	<i>Somerville</i>
Gately, John Francis	<i>No. Grafton</i>

Harris, William Augustus	<i>Philadelphia, Pa.</i>
Iskian, Heraut John	<i>Boston</i>
Kelly, Louis Lemuel Alfred	<i>Charlottetown, P. E. I.</i>
Lariviere, Ulysses Joseph	<i>Marvill, R. I.</i>
Lynch, James Joseph	<i>So. Boston</i>
Lyons, Joseph Vincent	<i>So. Boston</i>
Macomber, Alice Jay	<i>New Bedford</i>
Mallette, Francis Ernest	<i>Chelsea</i>
MacCorry, Harry Stuart	<i>Boston</i>
McKenzie, Lester Steele	<i>Cambridge</i>
McTernen, Malcom Bodwell	<i>Andover</i>
Marr, Thomas Edward	<i>Waltham</i>
Montgomery, William Edward	<i>Natick</i>
Morgan, Daniel Joseph	<i>So. Boston</i>
Nash, George Page	<i>Lewiston, Me.</i>
Nee, Joseph Festus	<i>So. Boston</i>
Noonan, Kaen Aloysius	<i>Roxbury</i>
Pazeian, Simon Vartan	<i>Worcester</i>
Potter, George Edwin	<i>Greenwood</i>
Riley, William Henry	<i>Woodstock, Vt.</i>
Ross, Phillip Knight	<i>Gorham, N. H.</i>
Roy, Emile Alfred	<i>Agawam</i>
Searle, Stephen Nourse	<i>Bellows Falls, Vt.</i>
Talty, Joseph Edward	<i>Woburn</i>
Tuttle, Fred Wilbur	<i>Bath, Me.</i>
Thomson, Harry Scott	<i>Moncton, N. B.</i>
Wood, Harold Abbott	<i>Brockton</i>

Special Students

Canovan, William Josiah	<i>Boston</i>
Lombard, Ralph Gerrish	<i>Belfast, Me.</i>
Lawton, James	<i>Somerville</i>
Moore, Horace Dwight	<i>Lynn</i>
Mullin, Charles Samuel	<i>Cambridge</i>
Steward, Charles Gould, A.B. (Harv.)	<i>Boston</i>
Taylor, Ernest Bossuet	<i>Waltham</i>
Tewksbury, Ralph Montague	<i>Woodstock, Vt.</i>
Tunncliffe, Edmund H.	<i>Boston</i>
Viles, Harold Smith	<i>N. New Portland, Me.</i>
White, Henry Anson	<i>Dorchester</i>

The Summer School at Tufts College*

d'Amaral, Joseph, *English*

Capen, Ruth Paul, *English* 8 Professors Row

Chapman, Charles Edward, *English*

Clark, Alvar Warren, *History*

Coffey, William Henry, *English* Tufts College Post-office

Creeley, Oscar Slade, *English and History*

Druley, Elmer Morey, *History*

Galarneau, Dennis Camille Amedee, *English*

Greene, Harry Marlon, *English*

Nason, Robert Edward, *English*

Thomas, Harold Asa, *English* Tufts College

Titcomb, Grace, *English* Farmington, Me.

Toy, Harvey Marshall, *English and History*

Williams, Arthur, *English*

* Where specific address is not given, the students were registered undergraduates.

Summary

CORPS OF INSTRUCTION

Emeritus	2	
President and Professors	49	
Assistant Professors	12	
Demonstrators	3	
Instructors	46	
Lecturers	6	
Assistants	28	
Laboratory Assistants	19	
Total engaged in work of instruction	—	165
Other Officers, not previously counted		8

STUDENTS

COLLEGE OF LETTERS:

Graduate	7	
Senior	41	
Junior	73	
Sophomore	85	
Freshman	92	
Special	18	
	—	316

DIVINITY SCHOOL:

Graduate	2	
Fourth Year	3	
Third Year	5	
First Year	7	
	—	17

MEDICAL SCHOOL:

Fourth Year	44	
Third Year	59	
Second Year	95	
First Year	151	
Special	39	
	—	388

DENTAL SCHOOL:

Senior	43	
Junior	100	
Freshman	43	
Special	11	
	—	197

SUMMER SCHOOL AT TUFTS COLLEGE

14

BROMFIELD-PEARSON SCHOOL

11

Total number of students	943
Names appearing twice	10

**The following persons carried on work at the Harpswell Laboratory,
during the Summer of 1902:—**

George A. Bates, D.D.S.

Professor of Histology, Tufts College Medical School

Grace Farrer, A.B.

Preceptress, Freedom Academy, Freedom, Maine

Valeria S. Goodenow, A.B.

Fellow in Biology, Tufts College

George B. Gould, A.B.

Instructor in Biology, Worcester Academy

Clara E. Ham

Student, Massachusetts Institute of Technology

George F. Hubbard

Instructor, Lawrence Academy, Groton, Mass.

Mary A. Ingalls, A.B.

Auburn, Me.

J. S. Kingsley, Sc.D.

Professor of Biology, Tufts College

Arthur B. Lamb, A.B., A.M.

Student, Harvard University

F. D. Lambert, Ph.D.

Instructor in Biology, Tufts College

Timothy Leary, M.D.

Professor of Pathology, Tufts College Medical School

Ralph W. Richards, A.B., A.M.

Instructor in Geology, Tufts College

W. S. Sutton, B.S.

Student, Columbia University

C. B. Wilson, A.M.

Professor of Natural Science, Normal School, Westfield, Mass.

E. B. Wilson, Ph.D., LL.D.

Professor of Zoology, Columbia University

Guy M. Winslow, Ph.D.

Instructor in Science, Lasell Seminary

Linwood L. Workman, A.B.

Instructor in Natural Science, Colby Academy, New London, N. H.

DEGREES AND HONORS

1901-1902

Forty-Sixth Annual Commencement

June 18, 1902

DEGREES CONFERRED

HONORARY

Doctors of Laws

AMOS EMERSON DOLBEAR

JOHN DAVIS LONG

Doctors of Sacred Theology

THEODORE ELMER BUSFIELD

WILLIAM HENRY RIDER

Doctors of Letters

HENRY NEHEMIAH DODGE

EDWIN GINN

BYRON GROCE

Masters of Arts

SARAH LOUISE ARNOLD

EDWIN RUTHVEN HOLDEN

ALBERT METCALF

WALTER EDWARD PARKER

JOHN PHILIP SWASEY

IN COURSE

Bachelors of Arts

JAMES FRANCIS ALBION (extra ordinem, as of the class of 1887)

IRNIE EMMA ALLISON

DANA CLARK BAILEY

WILLIAM ABRAM BRADE

JOSEPHINE ROSAMOND BURKE

RUTH PAUL CAPEN

RICHARD BRADFORD COOLIDGE

RUTH BURLEIGH DAME (with Final Honors in English)

JOSEPH DEXTER DANFORTH

KINGSBURY FOSTER (extra ordinem, as of the class of 1901)

FRANK LESLIE HAYFORD

ISABEL HOLMES (with Final Honors in Latin and Honorable Mention
in German)

EDNA HENDERSON JOHNSON
MABEL FRANCES KNIGHT
SARAH EMILY LOVELL
FORREST SUMNER LUNT
BLANCHE ELIZABETH LYON (with Final Honors in German and
Honorable Mention in French)
AGNES IRENE McCOY (with Final Honors in Greek)
ARTHUR HENRY MORSE (with Honorable Mention in Biology)
ALICE CECILE PAINE
LAURENCE HOUGHTON PARKER (with Final Honors in Philos-
ophy)
MARY BATES PARKER (with Honorable Mention in English)
EMMA FRANKLIN PAUL
HERBERT RUSSELL PEIRCE
LLEWELLYN ROOD PERKINS
HARRIET ELIZABETH RALLION (with Final Honors in German)
HELEN MABEL RAMSAY
BLANCHE ETHEL ROBERTS
BERNICE GERTRUDE ROBERTS (with Final Honors in Greek)
ELIZABETH ADAMS RUSSELL (with Honorable Mention in Greek
and German)
HENRY MARTIN SHUTE
EDITH HELEN STOWELL
MALCOLM EBEN STURTEVANT
MARIAN LUCY TITUS (with Final Honors in German and English)
FLORICE ALISON WATKINS (with Final Honors in Political Science)
ARTHUR GERRY WOODBRIDGE

Bachelors of Philosophy

HERBERT DALLAS BIXBY
CHARLES ERNEST MOORS
JOSEPH GORDON RAY

Bachelors of Science in Civil Engineering

ROGER WELLINGTON ARMSTRONG
NATHANIEL CHILD MILLS
EMIL MONGER SCHNECK
FORREST ELLIOTT TARR

Bachelors of Science in Electrical Engineering

WILLIAM WILLIS AUSTIN
WINTHROP TINGLEY ENDICOTT
HARRY BRIGHAM HUSSEY
NATHANIEL CHILD MILLS

HERBERT MORLEY MORLEY
FREDERICK WILLIAM PATERSON
HARRISON HERBERT SCHOOLFIELD

Bachelor of Science in Mechanical Engineering

ALBERT EVERETT MANCHESTER

Bachelors of Science in Chemistry

CLAIR LINCOLN BAKER
CHARLES WARREN DANFORTH

Bachelor of Science in Biology

ELLEN EDDY SHAW (with Honorable Mention in Biology)

Bachelors of Divinity

FRED HENRY COLE
GEORGE WILLIAM COLSON
WALLACE HATCH
CHARLES NORMAN MYERS

Doctors of Medicine

EVA ARGENE ADAMS
THOMAS F. ASH
JOSEPH ASPRAY
JAMES H. BLAKE, Ph.G.
HAROLD P. BLODGETT
ELBERN T. BOWERS Ph.G.
EDITH MAY BROOKS
GEORGE HAVEN CLARK
AUBREY JOHN COLLINS
SIMON FRANCIS CURRAN (cum laude)
ELIZA J. DADMAN (extra ordinem, as of the class of 1901)
HARVEY LOUD ELDRIDGE
EDWARD KEITH ELLIS
DANIEL JOSEPH FINEGAN
ELLIS E. FOSTER, M.D.
JOHN VINCENT GALLAGHER, A.B.
MARY EVA GILL (cum laude)
GEORGE WILLIAM GILLETTE
FLORENCE GILMAN (summa cum laude)
CORA ELIZABETH HARRIMAN
RALPH FRANKLIN HODGDON
ABRAHAM J. HURWITZ, Ph.G.
ALICE MAY JACKMAN

ANTIONETTE F. KONIKOW-BUCHOLZ, A.B (cum laude)
ALICE ESTELLE LILIENTHAL
LEONARD J. LOEWE, M.D.V.
JULIAN DYER LUCAS
CHARLES MALONE (cum laude)
JOHN MALONE, LL.B.
MATHILDE M. MASSÉ
ERNEST ALFRED MAYELL
RICHARD A. MORGNER, Ph.G.
CHARLES A. MÜLLER
FRANK AUGUSTUS MURPHY
JOSEPH J. O'BRIEN
MARIE JANETTE DE OLLOQUI
ERNEST SUMNER OSBORNE
ALONZO KINGMAN PAINE
ALBERT MUNRO PARKER, A.B.
ANNA HOWE PEABODY, A.B.
LEWIS WAITE PEASE
WILLARD CHUTE PETERS
HANNAH CORALYNN SIMMONS
JAMES F. SMELTZER

Doctors of Dental Medicine

EDWARD S. BENNETT
PLINY W. BERKS
EDWARD V. BURKE
JOSEPH H. BUSSEY
JAMES W. CAIL
MELVIN C. CANN
FARQUHAR D. CARTER
ARTHUR H. CLARK
BERTHA J. DAVIS
EDWARD T. FOX
GILES C. GRANT
ERNEST W. HOMAN
IVAN S. KEITH
FRED E. KING
ERNEST F. LINCOLN
MAURICE E. LOCKE
JAMES P. LOCKHART
ALEXANDER S. MACLEOD
EDWARD A. MERRILL
SAMUEL I. MOODY
GERDA VON B. PERRY

STEPHEN D. PERRY
LEWIS J. PIERCE
SUMNER W. PRATT
MARK ROMANOW
FREDERICK P. RUSSELL
HARRY P. SMALL
ALBERT L. SMART
GEORGE A. TEWKSBURY
JOHN P. THAYER
CHARLES R. VILES
ROLLIN E. WELLS

Masters of Arts

RICHARD BRADFORD COOLIDGE
RUTH BURLEIGH DAME
JOHN EILLS
EDITH LOUISE HODGE
ISABEL HOLMES
RALPH WEBSTER RICHARDS
HENRY MARTIN SHUTE

Master of Science

CHARLES BROWN GRAVES

Awards of Prizes, 1901-1902

Entrance Examination Prize for 1902

SARA LUCY BUXTON

Goddard Prize in Mathematics

SETH ARTHUR LORING

Greenwood Prize Scholarship in Oratory

CHESTER BRADSTREET STORY

Wendell Phillips Memorial Scholarship

LEON RYDER MAXWELL

Prize Scholarship of the Class of 1898

EDITH LINWOOD BUSH

Winners of Prizes in the Annual Debate

THE CAPEN DEBATING CLUB

Best Individual Debater

ARTHUR WILLIAM COOLIDGE

Rhetorical Prizes

First Division

PHILIP MESERVE HAYDEN (1)

BERTHA LOUISE COMSTOCK (2)

Second Division

CLARENCE ELMORE WATKINS (1)

RICHARD BRADFORD COOLIDGE (2)

Third Division

RUTH PAUL CAPEN (1)

CHANDLER MASON WOOD (2)

Greenwood Prizes in Oratory in the Divinity School

WALLACE HATCH

ALFRED ROSCOE MAXWELL

GEORGE ARTHUR MILLER

